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ARTIFICIAL PNEUMOTHORAX IN THE TREATMENT OF PULMONARY TUBERCULOSIS

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CHICAGO

1. *History.*—Compression of the lung with gas, as a means of treating the tuberculous lung, was first proposed by Carson, about one hundred years ago. Forlanini, Padua, however, in 1882, first applied the idea. Murphy, working independently, used nitrogen gas to collapse the lung in a number of cases of advanced tuberculosis in 1898, and reported on them to the American Medical Association at Denver in that year. Nevertheless, the treatment did not receive recognition until several years later, when it was taken up by L. Brauer, Spengler, Von Muralt and others. Since 1907, the Europeans have treated several hundreds of cases and have even formed the Pneumothorax Society. The knowledge and subsequent adoption of the treatment have spread generally through Europe. More recently, there have been a few papers on the subject before American societies.

2. *Definition.*—Artificial pneumothorax is produced by the admission of an innocuous gas into the pleural space; in consequence, the lung is either permitted to collapse or is actually compressed, depending on the method and apparatus used.

3. *Theory.*—The scientific foundation of artificial pneumothorax as a means of treatment depends on the fact that processes which reduce the space in the pleural cavity; for instance, pleural effusions, influence favorably, even severe tuberculosis of the lung. Spontaneous pneumothorax may have, temporarily, a good effect on the existing tuberculous condition. A recent case having extensive involvement of both lungs, suddenly developed a pneumothorax; high temperature became reduced, rapid pulse dropped and conditions looked up. Soon the respiration became rapid and short. One hundred and fifty c.c. of air were withdrawn and the patient was for the time relieved. After a period of ten days, the patient again became distressed and was relieved of 250 c.c. A pyopneumothorax then developed, but caused no urgent symptoms. The pressure in the pleural cavity was negative until the day before death, when it rose to 26 c.c. (water); 250 c.c. of air were again withdrawn, but the other lung was no longer competent and the end came.

4. *Apparatus.*—The collapse apparatus consists of a gas container provided with a scale in cubic centimeters, a manometer and needle, suitably connected by rubber tubing. The manometer is absolutely essential; without it the operation becomes difficult and dangerous.

The compression apparatus consists of a glass bottle containing gas, connected with another similar bottle, filled with water. The latter, emptying through tubes, into the former, displaces the gas which is thus forced into the pleural cavity under considerable pressure.

5. *Technic.*—Before a patient can be considered to be a fit subject for collapse, he should usually have been carefully studied for a more or less lengthy period. The procedure at the Chicago Fresh Air Hospital is to watch the patient for at least thirty days to determine whether any satisfactory progress is being made; to decide whether the operation is, after due consideration, justifiable.

Often a patient presents a bilateral condition, which, *per se*, excludes operation. Within thirty or forty days, one lung, perhaps, affected in lesser degree, clears up, thus creating a proper condition for the collapse of the cavernous lung. Again, such marked improvement in the local and general condition is observed after a period of rest that the operation becomes unnecessary, and therefore unjustifiable.

A Roentgen picture should be made of the

chest before the operation is proceeded with. While it is possible to determine conditions with a fair degree of accuracy without it, the use of the x-ray plate renders such great assistance that its use can be illy dispensed with. The great point is to determine a spot free from pleuritic adhesions; and this is not an easy thing. It is not safe to depend on a positive Litten, nor to regard the downward excursion of the lung as always indicating a free cavity. On the other hand, a free pleura has been found where these signs were absent. I have come to regard the clear and distinct transmission of râles to the stethoscope with suspicion, for my needle has failed, several times, under such circumstances, to find a free pleura.

When determining the site which offers most chance of success, it may be at the same time, marked and disinfected with tincture of iodin; assuming that proper cleansing of the skin has already been performed. A small incision, not more than 5 mm. long, is now made through the skin; then the needle, aspirating size, with blunt point, is connected with the rubber tubing which is attached by a "T" to the manometer and to the closed-off gas container. The needle is now carefully thrust through the muscularis and the parietal pleura. The operator's eyes should be directed toward the manometer after the introduction of the needle into the wound. Directly the parietal pleura is pierced, the manometer will indicate negative pressure by a sudden rise in the near column; *provided,* that there is no adhesion between the pleura at the point of puncture. Should the column of water slowly sink, indicating positive pressure, there is a possibility that a blood-vessel has been entered. Should gas be admitted now, air embolism would result and sudden death occur. The manometer must be the sole guide in this stage of the operation, and should be watched constantly. Should the pressure be negative, the stopcock on the gas container may be opened. With free pleurae, the gas will enter the cavity freely. Closing the cock, now, the column of water will be seen to rise and fall with inspiration and expiration. Should the contrary be the case, one must suspect puncture through the diaphragm into the abdomen.

Should the pleural cavity be small or limited by adhesions, the negative pressure soon becomes positive and the flow of gas ceases. It is well to check the flow every 100 c.c. to observe manometric action.

Operators differ as to the amount to be administered at the first operation. Forlanini[1] gives only 200 to 300 c.c.; Weiss, never over 1,000 c.c.; Brauer gives as much as 1,800 c.c., practically as much as the patient will take. My own practice is to give as much as the patient can take with comfort; usually from 800 to 1,000 c.c. The absorption of gas occurs with rapidity in the first instance; therefore it becomes necessary to reinsufflate at frequent intervals—e. g., three to five days. The intervals may then be lengthened to one week, ten days, two weeks, a month. Fever patients are said to absorb more rapidly than non-febrile. Further, it seems that cases presenting signs of pleurisy also absorb slowly. L. Brauer regards the puncture in the first instance as dangerous. He therefore makes an incision, 2.5 to 3 cm. long, through the skin and muscularis. The intercostal muscle is then carefully retracted and the parietal pleura comes into view. This is, if free, perforated with a blunt canula and the gas administered. (Sauerbruch, Technic der Thorax Chirurgie.)

If the pleura shows adhesions, the wound is sewed up and the operation repeated at another location. The objection to this method lies in the ease with which subcutaneous emphysema may occur, and in the fact that the time consumed precludes many attempts at one seance. Brauer uses the puncture in reinsufflations.

6. *Negative Pressure.*—This varies in different individuals and in the same individual, according to the distance from the hilus where it is lowest. The elastic mass of the lung is an important factor in the production of negative pressure. In reinsufflation where the nitrogen has been absorbed largely, it is often difficult to reestablish a condition of collapse. At first, the lung seems to be adherent to the chest wall; soon, however, if the operation succeeds, the gas flows more and more rapidly as the lung cleaves from the parietes and retraction takes place.

7. *Indications and Conditions for Operation.*—Practitioners of artificial pneumothorax are not entirely at one as to conditions and limitations of its application. L. Brauer states repeatedly: "Only such cases should be operated on as have failed of cure by hygienic and dietetic means;" cases, in fact, for which no hope exists, aside from lung collapse. The Brauer and Spengler series of 88 cases were almost all operated on with this condition in view, but the 23 deaths and 8 failures point the query, "Is it well to wait until the outlook is so desolate?" Is lung collapse such a desperate operation as to be used

1. Trans. Tub. Cong., Rome, 1912.

as a last resort? Certain other practitioners have recommended the operation *before* conditions become desperate, before the pleural cavity has become largely obliterated; even while the diseased lung still contains large healthy areas which will surely be sacrificed by the operation, but will equally certainly be destroyed by the advancing disease if time enough be allowed. A *sine qua non,* concerning which there is no dispute, is that the opposite lung must be healthy, or, if disease be present, it must be so quiescent that respiration can be carried on without embarrassment. For the successful production of a pneumothorax it is also necessary to have a free pleural space. It is evident that adhesions of the pleural layers make impossible any attempt to collapse the lung. It is permissible to operate on febrile cases. The success in these instances rests on the disappearance of cavities, the impeding of lymphatic and sanguineous circulations and the emptying of cavities and parenchyma of septic material. After such collapse it is common to observe sudden temperature rise with signs of infection similar to tuberculin reaction, followed by steady drop of temperature and pulse.

Hemorrhage is also regarded as an indication for collapse of the lung and has been practiced by Bochalli, Rothschild,[2] and others. It is vital to determine from which lung the blood comes, not always a simple matter, when both lungs are flooded with blood, and the bronchi are producing numerous rales. In one such case I was unable to determine, seeing the case once, which lung was the offending organ; and my tentative diagnosis was wrong. Four others were, however, successfully diagnosed and operated on with absolute cessation of bleeding. Two were operated on during hemorrhage, the others in the interim.

Persistent high temperature must be regarded as a positive indication for this operation. This, even, when the apparent area is slight and the amount of lung to be sacrificed is great. In support of this point, Renon points out the value of pneumothorax in galloping cases where arrest has occurred immediately the lung collapsed. Here a few weeks will terminate the case fatally; the loss by collapse of most of the lung must be considered slight in comparison.

Under *contra-indications* must be considered extensive pleuritic adhesions, miliary tuberculosis, disease of both lungs, empyema and disturbance of the circulation. Coexistent intestinal disease has been regarded as a contra-indication, although amelioration, instead of exacerbation of this condition, has been noted. Laryngeal involvement is not a contra-indication to lung collapse; *au contraire,* the resulting diminution of cough and expectoration favorably affect the throat disease.

Dangers and Complications.—So many untoward happenings have been recorded that the production of pneumothorax cannot be regarded as an entirely harmless proceeding. The most alarming, probably of all accidents, is air embolus. This may occur through puncture of a vein, succeeded by the admission of gas, or from rupture of adhesions and consequent suction of air into a vein. Air embolus may cause a temporary unconsciousness, as in one of Brauer's cases, or may cause convulsions, followed by death. Brauer has reported four cases of air embolus; Weiss adds one more which occurred in the seventh insufflation. It was characterized by epilepsy of the Jacksonian type, mental dulness, cyanosis and weak pulse. Recovery after three hours. Lyonnet and Piery report a case of death at the third insufflation. The cause of death was held to lie between air embolus and pleural shock. This accident can hardly happen if the operator will constantly watch his manometer, not permitting gas to pass through his needle until the manometer clearly indicates the proper position. Hardly less terrifying is the occurrence of pleural shock, caused, in some cases, by the puncture of the pleura.

Weiss reports a case of pleural shock at the moment when the costal pleura was punctured. The patient became cyanotic, dyspneic and restless. After the symptoms subsided nitrogen was administered, when the symptoms recurred. There was no sign of shock at subsequent fillings. Brauer and Spengler report a case where death came directly the pleura was punctured. Restoratives, promptly applied, were of no avail.

Injury to Lung.—This is possible and constitutes the chief objection of the Brauer school to the puncture method. The damage to the lung, *per se,* is slight. Of more importance is the possible effusion which results; this may be so slight as to escape detection, or may be so large as to seriously increase the intrapleural pressure. Usually these exudates disappear spontaneously, but may be aspirated a few times in the way of treatment. More than one observer holds the high pressure method responsible for many effusions.

Adhesions are the great obstacle in the production of the pneumothorax. The flat, broad adhe-

2. Jour. A. M. A., Oct. 28, 1912.

sions defy any effort to inject gas, especially when they are old. New or young adhesions give way, often, on repetition of the insufflation. Here the gas serves to keep the adhesion on a stretch, while each successive cough or respiration serves to still further attenuate it.

Sometimes the adhesions, instead of breaking, carry away a portion of the lung, as in Bochalli's case, where a cavity was torn open. Hemorrhage occurred, and subsequently, infection of the "good lung." Keller reports a similar case. On the other hand, adhesions may prevent lung collapse, and, maintaining cavity conditions, further the occurrence of hemorrhage, which, as often happens in rigid-walled caverns, may prove fatal.

Excessive Pressure, or Overinsufflation.—With the Brauer method it is easy to overinsufflate the pleural cavity, so that pressure is brought to bear on the good side. This produces a bulging of the mediastinum, aberration of the esophagus and embarrassment of the organs of the sound side. This is manifested by dyspnea, cyanosis, pain, anxiety, and, in the case of the esophagus, difficulty in swallowing. There may be, as a result of this distention, rupture of the mediastinum at its weak spot, whereon the symptoms become urgent. Excessive bending of the body, straining and so forth, after insufflation, may bring about this rupture, which is not painful—rather is it characterized by a sense of giving way. The immediate remedy is to draw off so much gas as will permit the patient to breathe easily. The pneumothorax may be reestablished later. With the collapse method the dyspnea passes off after twenty-four to forty hours. Wellman reports a temporary paralysis of the vocal chords by pressure on the recurrent nerve.

Subcutaneous Emphysema.—This occurs as the result of escape of gas through the puncture canal, and may develop until it extends up the chest to the neck, down the arm and even down to the hip. It occurs in both methods of gas administration. Coughing, laughing and physical exercise will tend to produce this condition. A few days will suffice to absorb the gas.

Some patients complain of loss of appetite and digestive disturbance after an insufflation. The fact that ptosis of liver, stomach, etc., are produced may serve as an explanation.

After the operation there is usually an increased pulse rate, increased respiration and often a rise of temperature. The last is probably due to the lung compression which results in throwing into the circulation a large amount of toxin. This subsides soon; there usually occurs, also, profuse expectoration following the primary insufflation. Forlanini fears inspiration into the other lung of this profuse sputum output, but his anxiety is not generally shared.

In the event that influenza or bronchitis occur in the sound lung, there is danger that old foci may flare up and render the patient's condition more dangerous than before. It becomes necessary here, also, to deflate the diseased side. This procedure has not been of benefit, however, in pneumonia of the sound lung. In passing, it may be said that foci in the good lung are favorably influenced by the pneumothorax of the bad side.

Effects.—In hemorrhage, the immediate effect is to stop further bleeding. The effects in cases operated on for tuberculosis, i. e., cavities, fever, cough, etc., are more or less prompt.

The cavities collapse directly; by reason of the collapse and resulting compression, large quantities of sputum are expelled within forty-eight hours. Then comes the reduction of expectoration, sharp or gradual drop in temperature, lessened cough and distinct improvement, subjectively as well as objectively considered. Toxin absorption is much reduced, which usually soon influences the appetite favorably. Weight usually remains the same. Ultimately the cavities are obliterated by connective tissue and foci are walled off by the same means. Put briefly by Balvay and Arcelin,[3] the effects are stated thus: (*a*) emptying of cavities filled with pus; (*b*) diminution of pulmonary circulation; (*c*) retardation of the lymphatic flow and absorption; (*d*) placing at rest of the diseased organ. The psychic effect is powerful. Provided that the first operation has been successful, patients will ask for a repetition from time to time. They often state that they do not feel so well when the "tank" is going down.

Anatomically, the effects are interesting. Kistler[4] reported a case treated nine months, which came to autopsy. He noted great hyperplasia of connective tissue, which became destructive through cutting off alveolar epithelium; also, that the lymph spaces were greatly dilated. Further, Kistler states that the compressed lung is protected against new infection, thus confirming Forlanini's contention. He also found collapse of cavities and encapsulation of foci.

Kauffman[5] prolonged a pneumothorax on healthy dogs with the result that fibrous bands

3. Lyon Medical, 1912 No. 3.

4. Beitrag z. path. Anat. d. Pn. Th., Kl. d. Tub. Bd. xix.

5. Ueber d. Veränderungen d. Lungen. Pleura, u.s.w., Beitr. d. Kl. d. Tub. Bd. xviii.

were formed, which bound down the lung so that expansion was impossible when the pneumothorax was allowed to go down. Other observers, as Bruns and Saugmann, confirm these findings and call attention to the thickening of the visceral pleura occurring after prolonged pneumothorax. Often the pneumothorax becomes steadily smaller through the growth of adhesions which progressively bind the lung and thorax wall together. One of my own cases illustrated this, where it was possible to insufflate 300 c.c. of nitrogen at first, the cavity has become so small that less than 100 c.c. can now be introduced, even under pressure. There has been, however, a satisfactory improvement along all other lines. Weiss[6] reported an autopsy eighteen months after first insufflation was made. There were no new tuberculous lesions discovered.

CASES

Murphy[7] reported seven cases in 1898. The report shows that the cases had not been under observation long enough to draw conclusions, but yet sufficiently long to demonstrate the great value of the operation. Murphy mentioned dangers, viz., gas embolism, infection with impure gas, lung puncture, rupture of infected foci and overdistention with gas. He recommended reinsufflation in six to ten weeks. At the time he had reinjected but one case. No fatalities were recorded.

Baer u. Kraus[8] have reported 14 cases, 10 have survived six months to three and one-half years. Three patients died after a long period of improvement from involvement of the other side; one from intestinal complication.

Murard[9] reports one case which, while the pneumothorax was continued, improved and, during three years, had good working capacity. With absorption of the gas, patient became worse; bacilli were still present at end of three years.

Piery[10] reports 10 cases. Three lived, the balance died of hemorrhages, or of involvement of the other side; 6 cases showed temporary improvement. This citation indicates the necessity for careful selection of cases.

Bochalli[11] reports 6 cases, which, being far advanced, gave slight chance of success; yet, only two are classed as failures. Brauer and Spengler[12] report 88 cases, mostly their own, together with reported cases of v. Muralt, Philippi and others. There were classed as failures, 8; cures, 28; deaths, 23; fair results, 13; slight improvement, 1; still under treatment, 15. There were living, four to five years after treatment, 1; three to four years after treatment, 8; two to three years after treatment, 16; one to two years after treatment, 23; over six months after treatment, 11; under six months after treatment, 11.

Brauer returned 27 patients to work; these had been under treatment one and one-half years or more; all cases were moderately severe.

Saugmann[13] reports a series of cases: (*a*) 11 were operated on as a last resort; of these, 10 died, 1 doing well; (*b*) 11 cases complicated with tuberculosis of larynx or intestines; of these, 8 died, 3 showed improvement; (*c*) 35 cases without severe complications; 12 were well after terms ranging from one year and six months to three and one-half years; 5 were apparently well after terms of ten to fifteen months; 10 were still under treatment after seven months to two years and nine months; 8 died after terms of three and one-half months to two and one-half years.

A final report of Saugmann covering 32 cases gives: 5 cases well, 13 no symptoms, 10 improved, 4 dead.

The experience of Koch, Sterling and Pearson[14] might be adduced, but the experiences are similar to those already reported.

AUTHOR'S CASES

Operated on because of persistent high temperature, two.

CASE I. Woman, aged 35 years, married.

Admitted to Fresh Air Hospital Nov. 2, 1912. Examination showed her to be a moderately advanced case, second extent. Mucous râles down to second space, right; behind, râles were found down to the third vertebra; pectoriloquy over the right apical space.

The chief and interesting feature of the case was the persistently high temperature. Her history showed that, in the hospital which had cared for her before she came to "Fresh Air," her temperature had never been less than 102.5 for two months previously. For the first month at "Fresh Air" her temperature ranged from 101 to 102.5 daily. The sputum contained numerous tubercle bacilli and other organisms. During the second month the fever remained around 102; average respiration, 20; pulse, 88 to 110. Weight on admittance, 96.5 pounds; six weeks later it had risen to 101. Because of the high fever it was decided to collapse the right lung.

Therefore, December 26, 850 c.c. N were given in the eighth intercostal space, midaxillary line, right side.

December 27, temperature normal all day. Sputum for twenty-four hours, 135 c.c.

Jan. 1, 1913, 800 c.c. N; sputum, 160 c.c.; temperature, 100; pulse, 84.

6. Ueber Komplikationen bei d. Bhdg. Kuenst. Ph.-Th., Beiträge z. Kl. d. Tub., Bd. xxiv, Heft 3.
7. Oration in Surg. Denver Meetg., A. M. A.
8. Allg. Wiener med. Ztg., 1912, Nos. 12 and 14.
9. Lyon Med., 1911, No. 49, p. 1-203.
10. Lyon Med., 1912, Nos. 9 and 10.
11. Beitr. z. Kl. d. Tub. Bd. xxiv, Heft 1.
12. Beitr. z. Kl. d. Tub., Bd. xix, Heft 1.
13. Med. Kl., 1911, Heft 4.
14. The Choice of the Patient for Art. Pn-Th. Treatment. Practitioner, 1911, p. 382.

January 9, 1,300 c.c. N; sputum for twenty-four hours, 45 c.c.; highest temperature since January 1, 100.4.

January 16, 850 c.c. N; sputum, 35 c.c. No chills since establishment of the pneumo-thorax.

January 30, 300 c.c. N; sputum, 25 c.c.; temperature, 99.2. Comes to all meals.

February 6, 1,000 c.c. N; sputum, 5 c.c.; temperature, 98.6.

February 13, 550 c.c. N; sputum, 4 c.c.; temperature, 97.8.

March 13, 900 c.c. N; sputum, 5 c.c.; temperature, 99.

April 3, 500 c.c. N; first puncture in the sixth space failed; second attempt, seventh space, successful; sputum, 1 c.c.; temperature, 99.2.

April 25, 700 c.c. N; sputum, 1 c.c. daily; temperature, 98.8-99. Returned home. Treatment to be continued.

Case 361. Woman, aged 18 years.

Admitted to "Fresh Air" Hospital Nov. 24, 1912. She had been treated in another hospital for several weeks without bringing down a persistently high temperature. Pulse on admission was 110; respiration, 20; temperature, 100.4. During the next thirty days the temperature ran to 102-103 daily.

Physical signs: Marked scoliosis; both scapulae slow in motion; emaciation of both suprascapular spaces; râles were audible over the seventh cervical, first and second dorsal vertebrae; also mucous râles in the right interscapular space.

The pulse range during the first six or seven weeks was never below 120 and would rise, at times, to 130. On account of the high temperature it was decided to collapse the right lung. So, January 8, 1,000 c.c. N were insufflated into the right pleural cavity, without difficulty. Patient complained bitterly of pain and dyspnea, both during and after the operation. Within two days the evening temperature had fallen to 97.4 and remained there for forty-eight hours. It then rose again to its old height. The sputum, after the insufflation, amounted to 45 c.c. daily, dropping to 20 c.c. in one week. After the second injection of 700 c.c. the sputum output rose to 95 c.c. January 23 a third injection of 575 c.c. was made. Two days thereafter the sputum had nearly disappeared. Up to this latter date tubercle bacilli had not been demonstrable, nor, in fact, at any time during the course of treatment. However, the granules of Much were discovered in the sputum. February 16, 550 c.c. N were given and March 6 a final injection of 525 c.c. The net result of treatment was that the general temperature average was lower, but the pulse still touched 130 daily, even going to 140. Respiration ranged from 24 to 32. The sputum diminished from 10 c.c. down to nothing.

Minute doses of tuberculin were tried for a time, with a view to the reduction of fever, but without avail. Having failed in its purpose, the pneumothorax was now allowed to absorb. The fever remained high until April 20, when a tuberculous meningitis supervened. Exitus ten days later.

For hemorrhage, four cases.

Case II. Male, aged 43 years. Had been sick one year. Lesions confined to left upper lobe. From June, 1912, when first admitted, to December 5, patient suffered from frequent hemorrhages. In November the bleeding became alarming and a pneumothorax was attempted. Two attempts to find the pleural space through the seventh and eighth spaces behind failed. The patient fainted and the operation was abandoned. During December, 1912, further bleeding occurred and a second attempt to produce a pneumothorax was made. This was made through the fourth space left anteriorly and was successful. The next day patient spat 230 c.c. sputum. Five further injections were made and patient returned to his home March 31, spitting 30 c.c. daily. No further hemorrhages.

Case III. Male, referred to Fresh Air Hospital in an almost exsanguinated condition. He received, at once, 1,200 c.c. N in the right chest, which alone showed signs of blood. Pulse, 140. Patient unable to move without fainting. The history revealed that the patient had bled daily for almost one month. Two further injections of N were made, after which the pulse was observed to range from 90 to 100. Temperature, 98-99. No hemorrhage after the first filling. Patient is now doing well and has gained in every way.

Case IV. Woman aged 47 years. Had been bleeding three weeks. Owing to recent hemorrhages, no accurate examination of the chest was made. On admission pulse was 140, respiration 38 and temperature 103. Two days later, after improvement, patient lost 400 c.c. blood; 900 c.c. N were at once injected into the left chest, and after a second small hemorrhage two days later 300 c.c. N more given; then hemorrhage ceased. Temperature dropped to 100.4. Pulse remained around 140. A bronchopneumonia supervened and the patient died ten days after the first administration of gas.

Case V. Male, aged 22 years. An arrested case discharged from Fresh Air Hospital, March, 1911. Returned with a history of having had repeated large hemorrhages, 300 to 500 c.c. in amount. He has now received five injections and has not bled since. General condition excellent. No cough. No expectoration.

For failure to progress, three cases.

Case VI. Male student, aged 18 years. Entered "Fresh Air" Oct. 28, 1912, presenting signs of an early tuberculosis, and stated that he had no symptoms of the disease previous to one month before. He had slight cough with expectoration; appetite good, ability to exercise good; weight, 107 pounds. Cervical glands enlarged; mucous râles in third and fourth spaces left, and in the left interscapular space. Pulse, 80 to 100; temperature, 98 to 99.6. By November 28 a slight but definite pectoriloquy was demonstrable at the fourth space; sputum increased. Numerous tubercle bacilli.

December 5, 500 c.c. N were given. At the first puncture the needle found a much thickened pleura, but no free space. The seventh space in the post-axillary line was next punctured and the sinus found. The patient felt faint after the operation, but recovered readily.

December 11, 1,300 c.c. N, no sputum. December 19, 1,400 c.c. N; general condition excellent. December 26, 1,100 c.c. N. January 16, 1,200 c.c. N; patient now returns to his home in Wisconsin. February 10, 1,200 c.c. N. March 4, 1,400 c.c. N. March 24, 1,000 c.c. N; patient does not cough and does not spit. Weight has increased from 107 to 118 pounds.

Case VII. Woman, aged 47 years; far advanced; third extent case.

Patient had one hemorrhage in July, 1912. Had steadily failed and lost in weight until December 11, when she was admitted to "Fresh Air" for an artificial pneumothorax. The first insufflation caused much pain, owing to considerable cutaneous emphysema, which extended to the neck. Patient refused further treatment until January 2, when she received 1,260 c.c. N, which was taken very slowly. The needle repeatedly touched the lung, which seemed to retract sluggishly.

January 13, 1,100 c.c. N were taken with ease; expectoration and cough greatly diminished and general condition much better.

February 10 she again took 1,000 c.c. N, and again adhesions appeared to interfere with the collapse. There was considerable pain, from time to time, as if "something had given way," as the patient expressed it.

March 6, 1,100 c.c. N were taken without difficulty. Patient did well until March 15, when a slight hemorrhage occurred.

March 27, 460 c.c. N were given with great difficulty.

April 22 it was discovered that a tuberculous process in the "good" lung was somewhat more active than previously; this, coupled with the fact that it was very hard to find the pleural space, prompted the decision to discontinue the pneumothorax. At the present writing the patient is doing well, coughing and spitting infrequently.

Case VIII. Man, aged 20 years. Sheet metal worker. Began to cough May, 1912; he lost weight so that in August, 1912, he weighed only 128 pounds. His temperature averaged 102 to 103. He spent the summer on a porch bed, and succeeded in bringing his temperature down to 98.6. His weight had increased to 138 pounds; pulse, 78 to 88; cough much less, expectoration less. He did well until December, when temperature began to rise, cough increased and signs of invasion of the lower lobe of the affected lung (right) became manifest.

December 19, 1,050 c.c. N were injected into the sixth interspace postaxillary line. Sputum, 47 c.c.

December 25, 950 c.c. N; January 2, 900 c.c. N; January 20, 1,000 c.c. N. No incident in any case. Sputum, 1 c.c. in twenty-four hours. General condition excellent. March 3, 1,000 c.c. N; March 20, 1,200 c.c. N. Cough almost gone. Patient now living at home, returning each month for his "filling."

Operated on for cavity, six cases.

No. 256. Woman, nurse, aged 23 years; admitted to "Fresh Air" June 21, 1912. Examination: Pulse, 84; temperature, 98.6; respiration, 18; weight, 117¼ pounds.

Retractions in supra- and infraclavicular spaces and suprasternal space.

Retarded motion left side; moderate emaciation.

Right lung, prolonged expiration down to second rib. Left lung, mucous râles from apex to second intercostal space; pot-fêle over second space, doubtful.

Posteriorly, right, no signs; left, mucous râles from apex to seventh rib, high-pitched percussion note both suprascapular spaces.

July 21, weight, 126.5 pounds; respiration, 20; pulse, 94, no fever; few râles in first right interspace. August 21, definite cavitation left upper lobe; pot-fêle, positive; pulse and respiration same; temperature, 99.6; weight, 135.

September 30, râles were evident in the right apex. Pulse over 100; weight, 138. November 25, no signs in the right lung, cavity in the left lung extends to fourth rib; weight, 124; temperature over 100 at times. As the patient's general condition was distinctly worse, it was decided to attempt to compress the left lung.

On the last named date 300 c.c. N were injected through the seventh interspace, in the postaxillary line.

November 26, sputum 60 c.c.; December 2, 450 c.c. N; December 9, 400 c.c. N; December 19, 450 c.c. N; pulse, 95; temperature, 98.6; respiration, 20.

December 20 a marked emphysema appeared in consequence of exercise and laughter, patient having failed to obey the order to go to bed directly after the operation. January 3 patient had a sharp rise of temperature—102.5—with much digestive disturbance. Pulse, 130; sputum, 400 c.c. daily. January 8 it was possible to inject no more than 100 c.c. N. Temperature down again; sputum, 170 c.c. The cavity was and remained much in evidence, which was not the case prior to the set-back of December 20. January 13 it was impossible to administer more than 70 c.c. N, the pneumothorax having thus contracted. February 3, 70 c.c. N. At this injection a great thickening of the pleural membrane was noted. Temperature, 98.6; weight, 133 pounds; pulse, 96. Sputum, 5 c.c. daily. February 17, with the Brauer pressure apparatus, 60 c.c. N were given. March 27, 100 c.c. N April 14, 100 c.c. N. General condition excellent; patient began work in the hospital laboratory March 12, being employed from three to four hours a day. She will continue treatment.

Case IX. Male, aged 22 years. Cabinet maker.

Admitted to "Fresh Air" Sept. 12, 1912. Had been sick since March 19, 1912. Was usually tired, appetite poor, color pale.

Examination: Moderate emaciation, no pathologic signs in the right chest; cavity in the left upper lobe extending to the third rib. Musical and sonorous râles extended down to the fifth rib. Left, posteriorly, râles as far as the eighth space.

During the first month of sojourn the pulse and temperature were erratic, ranging from 66 to 100 and 97 to 100.5, respectively.

The second month showed more stability of temperature and pulse, but patient failed to gain in strength. Some gain in weight was made in December. Prior to January 23 the chief treatment had consisted in the rest cure. On this date, as the cavity showed signs of enlarging, 800 c.c. N were insufflated, with the result that all cavity signs promptly disappeared. Sputum, 60 c.c.

January 27, 1,200 c.c. N were given; sputum, 30 c.c.; pulse still around 110; respiration, 20. Patient immediately reported a greatly increased sense of well-being. February 3, 1,200 c.c. N were administered. February 17, 1,050 c.c. N. Temperature now began to be more stable and pulse frequently crossed below the 100 mark. March 10, 1,000 c.c. N; pulse, 96; temperature, 98.6; respiration, 20; general condition good. March 30, 1,000 c.c. N; sputum, 10 c.c. April 17, 650 c.c. N. May 12, 650 c.c. N; sputum, 5 c.c. daily. Still under treatment.

Three other cases (X, XI, XII) were also operated

on for cavity, the signs of which immediately disappeared. All showed improvement in a very short time, with reduction of temperature and pulse rate. Inasmuch as these cases have been so short a time under treatment, it seems proper only to mention them, reserving final report for a future occasion.

I wish to take this opportunity to express my thanks to Dr. John B. Murphy for valuable information and advice; to Dr. J. F. Golden for assistance in instituting this treatment.

SUMMARY

1. Artificial pneumothorax offers much in selected cases.

2. No progressive case should be given up without at least considering this operation.

3. It is better to sacrifice a partially destroyed lung than to await its almost certain destruction.

4. It is possible to save a fair percentage of otherwise hopeless cases.

2733 North Clark Street.

DISCUSSION

Dr. C. A. Elliott of Chicago: *Mr. Chairman:* It is interesting to note that this procedure of the artificial production of pneumothorax is going through much the same history as the tuberculin treatment for tuberculosis. For instance, it was first described as a cure-all for consumption, and then, after it was found that it was not a true cure, it fell into more or less disrepute. It was, however, continued as a procedure by men in Europe, and of late their reports have been so favorable that men in this country have again taken it up and find that it certainly has a place in the treatment of consumption. The optimistic reports that come from the European clinics are almost too optimistic to be credited, but undoubtedly a great many cases may be benefited by this method, when properly selected. It seems to me that the patients who have received this treatment have been too far along in the course of tuberculosis to be much benefited by any treatment. In view of the fact that there is very little danger connected with this procedure, some men are beginning to use artificial pneumothorax in the earlier cases, and apparently without ill effects. In the few cases that I have been able to see and work with the only untoward effects have been a generalized emphysema in two cases and an empyema in one. The patients complain of very little distress after its use, and one sees a beneficial effect almost at once. It seems that the cavities empty themselves more thoroughly and the patients are less toxic, even after the first few injections.

Apparently this procedure is now getting on a rational basis, and I think that in a short time we will all recognize that it has a place and should be used.

Dr. John Ritter of Chicago: As a worker in tuberculosis, I am much interested in this work. Dr. Gray and Dr. Elliott are both doing excellent work in this direction. Dr. Gray, I see, is following a combination of the methods of Forlanini and Brauer. It occurred to me some time ago that that would be the most feasible way of treating these cases.

In apical tuberculosis, especially with cavities, with a large amount of secretion and a large amount of mucus, with a large number of foci, I think that the artificial pneumothorax is indicated and will do good work. In basal tuberculosis, which we see occasionally in children, paralysis of the diaphragm by means of phrenectomy has been advocated recently. I would like to ask Dr. Gray if he can tell us anything in regard to this method, which is being advocated at the present time?

So far as the optimistic conditions are being reported, I listened to a paper only a short time ago in which a physician reported 40 per cent. of cases of pneumothorax as cured. I do not think in the history of pneumothorax treatment that we have any such favorable reports. I would like to ask Dr. Gray what percentage of his cases are improved or arrested.

Dr. Gray (closing the discussion): The skiagraph shows that on the side of the pneumothorax there is a marked pressing down of the diaphragm and very little movement, which to all intents and purposes means a fixation of the diaphragm, whether a paralysis or not.

I do not believe that under two or three years one can call a patient cured with advanced tuberculosis, even though a pneumothorax be maintained during that entire time, and I have not had my cases under observation as long as that.

In these cases there is always danger of infection of the other side. That we cannot prevent, and it has caused the loss of many of these cases where the treated side has done well. After a time a flare-up on the good side may occur, and death comes fairly rapidly.

THE DIAGNOSIS OF INCIPIENT PHTHISIS—THE POINTS DEMANDING EMPHASIS*

B. G. R. Williams, M.D.

PARIS, ILL.

"An early diagnosis may be considered a favorable circumstance in the prognosis of pulmonary tuberculosis," asserts Osler, when speaking of the outlook in a given case.

An early diagnosis—the earliest possible diagnosis—is the physician's part in humanity's battle against Koch's bacillus. True our citizens must be educated in the college of prophylaxis; true our research workers must carry out extensive studies in bacterin therapy. But is this the end? Not yet. For such an obligation to our fellow man do we owe, that a coward is he who through faint heart or the hour's exigencies, fails to play his little rôle before the curtain begins to fall and the drama ends, a tragedy.

IS THE ONSET TYPICAL?

There is a tendency on the part of clinicians to classify the modes of onset of pulmonary tuberculosis, while but a second thought would bring to our realization the fact that the very nature of

*Read by invitation before the Wabash County Medical Society, July 23, 1912, at Mount Carmel, Illinois.

the tubercle bacillus would not permit us to speak thus when referring to incipient infection.

Long before the sudden and violent hemoptysis; months before the huskiness of the voice is noticed by the friends; through many days before the fever burns and many nights before the sweating drenches, certain changes are occurring which would lead the watchful physician to suspect the presence of this hidden enemy. I have thought it best to emphasize this point, inasmuch as hemoptysis, vomiting, huskiness of the voice, fever, chills and night sweats are symptoms of established, advanced or even complicated infection rather than of incipient tuberculosis.

The onset is, therefore, usually insidious, perhaps preluding these above-named symptoms by many months; is difficult of recognition as a diseased condition, but is invariably of constant and typical symptomatology which may usually be identified if the physician is on the lookout for the condition and gets right down to business when making his examination.

There is a notion among the laity and indeed among some physicians, which I heard very eloquently expressed some weeks ago by a street faker, who was trying to scare some old farmers into buying his "wonderful catarrh medicine."

"Gemmin, gemmin," he said, "Here is a bottle of getah medicine. Now do you know what getah is? It's when your nose and mouth fill up with stuff and ye hawk and spit from morn till night. But when ye go to sleep, ye forgit to hawk and spit, and it runs down into yer stumick and gives ye consumption."

Now this idea of incipient tuberculosis has been laid at the door of our medical forefathers; but such an accusation is unjust, for listen to a few words from men who have labored before the existence of bacteria was known and died before their study was made a science.

Austin Flint, that great student of tuberculosis, in 1868 (fourteen years before Koch announced to the world his discovery) called attention when speaking of special points of diagnostic importance, to a "cough and expectoration, not succeeding an attack of acute bronchitis, and not connected with chronic pharyngitis; the cough at first *dry* and afterward, an expectoration."

Let us go back eleven more years and hear Barclay in his classical description, venture, "It must be regarded as unfavorable when cough has begun without preceding catarrh or coryza, but has been from the first, dry and hacking—changed for one accompanied by thin mucilaginous, rice-water sputa, and that form of expectoration has been followed by thick yellow phlegm."

SYMPTOMS OF INCIPIENT INFECTION

Now the most common "first symptom" is, alas, one which is not of startling abruptness nor in fact usually brought to the attention of the physician until others have appeared—I speak of a slow but steady loss of weight. But it is often our good fortune and, indeed, the good fortune of the patient that this fact is detected even though he may consult us in regard to other matters of health.

Here is an example: A young lady averaged 100 pounds in the summer and 105 pounds in the winter. During the past winter she did not gain her usual 5 pounds, but on January 1 weighed something like 98 pounds. She remained apparently in excellent health and good spirits; but during the month of January lost 2 more pounds and in February 3 pounds. Few people watch so closely alterations in their weight, but this young lady consulted her physician on this very point, though scarcely alarmed. The physician questioned her closely, but was able to bring out no history of suspicious symptoms. "No," she declared, "I have not coughed," but even as she finished the sentence, cleared her throat with a rasping sound. A complete examination followed and there was no question but that the tubercle bacillus had commenced his dreadful work.

Another woman complained that she had lost no more weight than her sister, whereupon the physician replied, "But, madam, you have no weight to lose while your sister has plenty to spare."

If I were to submit this question to a vote in your society, there is no doubt in my mind but that you would place it at the head of the list as most important in the diagnosis of early tuberculosis. As I have said, the patient has either unfortunately failed to keep tab on his weight or has not appeared for advice until other symptoms have thrust themselves on his attention.

I am inclined to regard languor as a symptom of importance secondary only to loss of weight; but in this connection I do not wish to be misunderstood. Languor is not typical of tuberculosis, except that it appears very early in this disease—much earlier than in the anemias in which it is a more constant symptom in the late stages. It may be defined as a "happy languor" as contrasted to the "anxious languor" of the other cachexias. As the older writers have expressed it, the patient may boast of excellent health while

every movement of the body gives token of feebleness and languor. His voice is weak as he states that he never felt better in his life; and he grasps your hand feebly as he tells how much work he can do.

This brings us to a third symptom of perhaps no less importance, but so opposed to the concepts of pathology and symptomatology as to lead us astray very quickly unless we are on the lookout. While our patients with cold in the head, rhinitis, sinus disease and asthma, buy lung cures and pester us with the never-dying delusion that surely their days are numbered; our consumptives are brought to us for diagnosis, dying, but stubbornly maintaining that they never felt better in their lives. Now there are, of course, exceptions to this statement; but I pass them over without comment for fear even a terse description might lessen the emphasis which I would place on the usual class.

What relation the tubercle bacillus bears to the opium poppy, I do not know, but, in truth, I have come to believe that the essential poison of this germ resembles very much in its action our drug morphin. Let me point out some of these similarities:

1. The chronic intoxication which gives to the morphin fiend a feeling of well-being, varies but little or not at all from that of the consumptive.

2. Either person remains happy in this sweet but damning influence.

3. Either person grows deceitful or even lies that he may not by his own lips convict his master. Fear of exile from those not infected does not cause this symptom; for it was observed many years before the contagiousness of tuberculosis was known.

4. The morphin fiend loses all regard for conventionalities; the consumptive cares not whom he may infect.

5. In either, there is an abulia, or a deficiency of will power. I *will* give up morphin! I *will* carry out your advice and treatment! Alas, the poppy and the tubercle bacillus do not will it.

6. Certain physical signs and symptoms resemble each other very closely—though perhaps I am carrying this comparison a bit too far. Apply De Fursac's physical symptoms of morphinomania and behold a classical picture of consumption—loss of flesh, diarrhea or constipation, pallor of the skin, muscular asthenia, tremors, etc., symptom by symptom. And for the chills, fever, sweats and more rapid death, these are not in the plan of Koch's bacillus; but as I shall show below, the result of secondary infection by the staphylococcus or other germs.

Morphin is a cruel master; no less so the tubercle bacillus which eliminates a poison that, though doubtless of different chemical composition, is identical in action. The tubercle bacillus is a true parasite; and its usual aim is to keep the patient alive as long as possible.

And what of the consumptive bliss? The victim, though languid, does not realize it. He appears to be in a brown study and perfectly happy. Ofttimes, like the morphin fiend, he loses his sexual desires and sexual powers very early, though this is not invariably the case. He is not forced to seek his poison, but this is supplied by the willing micro-organism. He passes through an euphoria, a true honeymoon of rapture which may be even more marked in the later stages of the disease. If pains are present he does not complain, unless they grow unbearable. Unlike the drug slave, he does not sleep away his time, but usually goes to the opposite extreme. He likes to work, he lives in pleasant reverie and ambition, ideas come easily, worry disappears and life assumes a smiling aspect.

Recall that this is not only a happy languor, but the patient, doubtless unconscious of the fact, becomes deceitful. Do not ask your patient if he has had a hemorrhage, but put a leading question—"When did you notice blood last?" or "Of course, you have coughed up a little blood, but I suppose in no large quantities?" It is remarkable how unwilling patients are to confess; and this cross-questioning must be clever indeed to make certain the point. They will conceal, at the command of the bacillus, this blood from their friends, or will explain its presence by a history of nose-bleeding.

As our fourth symptom in importance, we may place cough. Now true cough is by no means an early manifestation of tuberculosis, except when this disease complicates pneumonia or whooping-cough. Tuberculosis rarely or never is secondary to diseases of the bronchial tubes, though this fact is usually overlooked. A husky cough is not an early symtpom in true pulmonary tuberculosis. It may appear as the first *pronounced* symptom, but surely other manifestations have preceded it many months. Again, the husky bark of a tuberculous laryngitis may give warning that pulmonary involvement is to be expected later.

I have mentioned above that this is a dry cough. It is in fact so dry at first that it can scarcely be termed a cough, but rather an

"ahem" or clearing of the throat. It might be inferred that the patient is nervous and ill at ease. It is best, therefore, to watch him when he is not aware of this scrutiny. Change the subject, give him a paper to read and leave the room to fix up the medicine; and then play eavesdropper. Later the cough becomes moist and presents other features which scarcely concern this paper. I usually assume a cough to be tuberculous until proved otherwise.

The patient may experience some pains, but he usually makes no mention of them to the physician; and here, again, is an evidence of the damning intoxication. Close inquiry may often bring out the fact that these pains are present, but not severe, and are of a roving character. They are usually located about the shoulders and upper portions of the chest.

As sixth in importance, I would describe a very constant though baffling symptom—accelerated breathing. Normally the count varies from sixteen to twenty in the temperate regions. A count above these figures is of considerable importance, but easier said than done. Invariably the patient will be cognizant that you are counting his respiration. Did you ever *try* to breathe naturally? You cannot do it. I have attempted different methods, but usually met little success. Other examinations of the chest or, indeed, the entire front of the body, bring out alterations in the respiration rate. I have failed to eliminate the voluntary factor by pretending to take the pulse. Just at present, I believe that I am accomplishing my aim by pretending to measure the head. For this purpose, I stand back of the patient in position where I may count the inspirations and then make a large number of measurements with a pelvimeter, but pay no attention to these—simply devoting all my time to counting respirations, dropping a remark now and then in regard to the position of the head.

Concerning hemoptysis, I have spoken. Though not constantly among our earliest symptoms, its presence is of value in a diagnosis, especially if drawn from a reluctant patient by clever cross-questioning.

These constitute the chief earliest symptoms of pulmonary tuberculosis. Let me hastily review:

1. Slow but progressive loss of weight when patient does not have it to spare.
2. A happy and deceitful languor and physical inability.
3. A morphin-like euphoria, abulia and selfishness.
4. A dry hack or clearing of the throat.
5. Roving pains about the upper chest, concerning which the patient offers no complaint.
6. Accelerated breathing.
7. Hemoptysis, a history of which is often difficult to obtain.

True enough, other symptoms may appear early, but have less diagnostic value, and are subject to many variations. I shall list these briefly:

1. Diarrhea or constipation.
2. Suppression of menses.
3. Inequality of pupils.

Before taking up the physical signs, let me briefly dismiss several symptoms which appear in established and advanced phthisis, and which have no place in this paper. I refer to chills, fever, night sweats and vomiting. By nature, the tubercle bacillus is a selfish germ, seeking not the company nor the assistance of other bacteria, but preferring to work alone and hidden from these. In fact, he doubtless considers them his enemies; and I am certain that he actively destroys many of them when they attempt to keep him company. A notable instance is seen in whey-like fluids of cold abscesses where the true pus germs, when introduced, are quickly destroyed.

But after considerable involvement of the lung has taken place, the tubercle bacillus, finding much freedom, appears to permit certain forms of staphylococci and other germs to make their home in the deserted cavities. These newer arrivals multiply rapidly and lead to the formation of true pus with its attendant chills, fever and sweats.

You have been told that the tubercle bacillus may (by virtue of treatment or unknown reason) suddenly cease his work of devastation and lie potential for weeks, months or even years. You may have apparently witnessed this phenomenon in your practice, but be not deceived. So long as a tubercle bacillus is present, just so long is he *attempting* to slay your patient. Remissions in the course of tuberculosis may be explained by the destruction of the specific micro-organisms or of secondary invaders. Leave but one acid-proof bacillus freed from restraining influences and he will spare not a second to kill endothelium, coagulate blood and dare the lymphocites to destroy him.

PHYSICAL SIGNS AND TESTS

The idea that pulmonary tuberculosis cannot be diagnosed save by the presence of certain physical signs, clings to the average physician

as obstinately as the old man of the sea did round Sinbad's neck. From what I have said concerning the symptoms, it follows that the idea is wrong and is likely to lead to a diagnosis only of the established, advanced and complicated cases.

Henry Sewell has declared that the natural history of pulmonary tuberculosis, involving as it does gradual alteration by insensible steps of the normal structure, size and elasticity of the thoracic viscera, would seem to imply that we can never hope to determine by physical means the very advent of the disorder,

However, certain physical signs may aid us at times, even in the earliest cases. I am inclined to name as the most important of these a local increase of the temperature, directly over the portion of the lung involved. Suppose that the right apex has been invaded by the tubercle bacillus, the skin directly over the point shows a higher temperature than in other locations. The thermometer must be reliable and very accurate. The bulb of the ordinary clinical thermometer may be rolled into a fold of the skin. As I shall indicate below, the skin of the consumptive early loses its thickness, so that this manipulation is easily carried out. Butler recommends the use of a special instrument, the base of which has been flattened or coiled so as to present a large surface for contact with the skin. Although the local increase of temperature when present is of great importance, its absence is very frequently observed and does not speak against the presence of phthisis.

As a sign of importance secondary only to the above, a remarkable thinning of the skin is noted. As the weight of the body decreases, so do the storehouses of subcutaneous fat melt away. The skin may often be picked up as if it had no attachment to the fascia, long before the clearing of the throat is noticed.

I wish to lay third emphasis on a sign which was described by Austin Flint many years ago, but, like many other good things, has been dropped by the wayside. The scapula on the affected side is often restrained in its movement upward during inspiration, and seems tightly bound in its lowest position. The patient's chest is stripped—as, indeed, it should be for all these examinations—and the excursions of the scapulæ carefully noted and compared, both in ordinary and forced inspiration. For this measurement, I usually request the patient to sit in a chair with a low back, and the latter is taken as the base line for the measurements.

The other physical signs you all know, and need no special treatment outside the average text-book. That their value may not be overlooked, I am listing them without comment:

1. Fine and *persistent* crackling râles over point of lung involved. These may be heard during the cough or immediately afterward; also at the end of a forced inspiration. A little potassium iodid given a few hours preceding the examination may aid in bringing out these râles.
2. Slight diminution in diaphragmatic excursion on the side affected.
3. Diminished vesicular breathing or even bronchovesicular breathing over point involved.
4. Whispered voice may sometimes be heard over point involved.
5. Lagging of chest wall on involved side during inspiration and expiration.

THE TUBERCULIN REACTION

Now that our first great enthusiasm over tuberculin as a diagnostic aid is past, we find ourselves limiting our assertions or making them but half-heartedly. My experience with tuberculin has been disappointing, and I am not afraid to acknowledge this. The critic has told me that I do not know how to use tuberculin, but let us return the problem to the research worker until we can make and prove diagnostic statements after its use. Others are backing down somewhat more slowly, and as I read this, I am perfectly aware that the positive tuberculin reaction means "obscure tuberculosis"—if you wish to be in style—*obscure* tuberculosis. Here is a soft cushion for the fall. Many of us, however, have hit the ground heavily and nursed our bruises quietly. Obscure tuberculosis? This may be defined, so we are informed, as a positive reaction in an individual presenting neither symptoms nor signs of tuberculosis. Well, what are you going to do about it? Watch him closely, for he *may* develop the disease. And neglect the man who fails to show the reaction? The truth will out. Hear Butler, a man to whom we all listen when we are searching for the practical things in diagnosis: "A person without symptoms or physical signs, who reacts to tuberculin does not require treatment for tuberculosis."

THE SPUTUM EXAMINATION

After an examination of hundreds of specimens, I feel safe in saying that tubercle bacilli are always loosed into the sputum before fever appears (reference to the ulcerative or usual form of tuberculosis). Osler says that bacilli and elastic tissue may be present without definite physical

signs and may come from a very small focus not discoverable on examination.

There is an impression among many physicians that tubercle bacilli are found only in the later stages of phthisis, which conclusion is certainly erroneous. Now here is just the explanation of the idea. In therapeutics, only the specific drugs appeal to us, while in the field of diagnostics we are determined to call only the pathognomonic symptom or sign to our aid. It takes broader men, however, to practice medicine, as we find daily to our sorrow. Because tubercle bacilli have not been found in every bit of saliva, at every examination and in every patient whether with ulcerative or other forms of the disease—yes, even often in sputa of putrid bronchitis and what not; because this bacteriologic procedure has not stood all these unjust tests it is often inferred that the examination is worthless. Apply the same criticism to any *one* symptom or any *one* sign which I have mentioned and it sinks as surely as a snow fortress beneath a torrid sun. If but one drop of true sputum can be obtained, it is usually possible by certain methods, to demonstrate the presence of these germs.

Nor does the diagnosis of tuberculosis from a laboratory standpoint rest alone on the finding of Koch's bacillus; and a proper report does not end with a curt "positive" or "negative" scrawled on a printed form. Now, did you know that tuberculosis was often diagnosed and that on sputum findings alone, at least twenty years before the tubercle bacillus was formally charged with a share in the disease?

What of the presence of elastic tissue or "coughed-up lung?"

What of the presence of well-preserved elements or those undergoing a *dry* or coagulation necrosis as contrasted to the *wet* or suppurative changes noted in putrid bronchitis?

What of the presence of erythrocytes or of hemoglobin?

What of the negative evidence supplied by mucous spirals, heart failure cells, etc.?

What of the presence or absence of serum albumin, as I shall show below?

What of the presence of tyroid or granular masses which show by their peculiar staining characteristics their true nature?

What of the presence of large numbers of mononuclear cells—true tuberculous pus?

What of calcified material?

What of lung sand and stones? What of the Hagemann specific test? What of the inoculation of egg medium? What of the diagnostic inoculation of guinea pigs?

The man who examined the sputum was blind to all else but the presence or absence of acid-fast rods. The report says "Negative." We are prompted to reply by question, "Negative *what?*"

Now let us return to a consideration of the bacillus itself and some of the difficulties attending its identification. Presume, if you will, that we close our eyes to all other findings, valuable though they may be, and limit our endeavors to and finding of the little rod. Is this as difficult and disheartening a procedure as some would have us believe? Scarcely; still we must not always expect to find long delicate rods, occurring invariably in clumps, but often attenuated, or capsule-like forms or exalted, or coccus-like varieties.

I must not forget to emphasize several recent methods of sputum analysis which bid fair for a place among our standard tests. I refer to the Lissilur and Prirey serum-albumin test which is under certain conditions specific even before the bacilli appear and to which I have given attention in other papers: to the inoculation of egg albumin and to the new Hagemann test which is apparently a specific one as well as easily performed.

Finally, before finishing my examination of a patient, I invariably ask myself this question: "Why should *not* this be a case of pulmonary tuberculosis?" This, indeed, is a wise question. Here is a patient with build which we regard as suspicious, or with a hereditary taint. This man has worked in an elevator and his lungs have been bombarded by irritant dusts. This boy has been kicked in the side by a horse. This woman has made shirts in an attic or this one has bottled beer in a basement or guzzled it in a gutter.

This young lady has nursed her consumptive mother or has exposed herself to colds too numerous to mention. Here is an important point, and I wish to make a prediction. We have recently learned that leprosy is acquired only by repeated exposure and repeated infection; and this discovery has opened up a new book in the science of bacteriology. Recall the close family relation between the two acid-fast bacilli. Furthermore it has been found that by the tubercle bacillus animals may be sensitized to leprosy. I am convinced that only by repeated infection do many of us acquire pulmonary tuberculosis. If I do not see it incorrectly, the autopsy proves as much, and I am not so certain but that it may be seen in practice. Here is the prediction: that the laboratory proof will soon be forthcoming that *repeated*

tuberculous infection sensitizes to active and progressive phthisis. Perhaps I am wrong, but in such contingency it may be noted parenthetically that the subject of tuberculin would present rather different aspects not only in diagnosis but in therapeutics. The trend of these investigations gives the warning. Obscure tuberculosis may not prove so soft a cushion after all.

CONCLUSION

The tubercle bacillus is a sneak. The microorganisms of the acute infections attack boldly, are overcome at once or begin a desperate and aggressive battle. We cannot but admire their courage. But the germ of consumption enters the lungs silently and lies in hiding seeking vantage ground, waiting and waiting; perhaps for days, perhaps for years. And when it obtains a little foothold, it struggles to attain a greater one. And thus for months it may be slowly gaining ground without giving one symptom.

It loosens its treacherous anodynes into the body of its victim, closing his eyes not only to personal danger, but to the rights of others. One person dies of tuberculosis in America and Europe every thirty seconds—two every minute —3,000 every day.

Before the people rises a hand and a voice, "Lo, here! You must destroy your sputum." In echo another claims, "Lo, here! Here is the truth! You must sleep out of doors!"

But one accusing finger continues to point out the physician and his responsibility, *"Diagnose your cases in their incipiency!"* And hesitate not in debate, for the old Gentleman of the Forelock cannot put aside his scythe and hourglass and listen, but must hasten on his way.

THE EARLY IDENTIFICATION OF PULMONARY TUBERCULOSIS*

SUMNER M. MILLER, M. D.

PEORIA, ILL.

Notwithstanding the well-known fact that the successful treatment of tuberculosis of the lungs depends on its early inauguration, large numbers of consumptives continue to reach an advanced stage, undiagnosed as to their affliction or its stage, or else they fail to receive the benefits of the timely application of the well-known principles of treatment. This remark is inspired by a scrutiny of the many cases seen in dispensary practice, whose histories go back for months or years, but in whom the correct diagnosis had been deferred till disastrous progress had been made. Moreover, in a good proportion of the cases which had been recognized, the treatment was inadequate, and not in accord with modern principles. This delinquency depends, I believe, upon the lack of appreciation on the part of many physicians of the significance of relatively slight physical signs associated with equally significant subjective symptoms.

It cannot be sufficiently emphasized that the presence of slight physical signs in the lungs is an evidence of considerable lung involvement, and of considerable progress of the disease. The interval between the first infection and the presence of impaired resonance, roughened breathing and rales must be sufficient for the growth of tubercles and their fusion to form a consolidated mass of appreciable size. This interval at the least must be several weeks, and it may be much longer, even being prolonged to months, according to the massiveness of the infection and the resistance of the individual. During this period subjective symptoms are present without physical signs, or these are quite vague, or the infection may subside completely. This period is what we may call the silent period or interval during which no definite findings are apparent. It may be quite short in a rapidly advancing case, and it will not be observed in a great many early cases, because we do not see them early enough.

Moreover, the earliest physical signs that appear following the silent interval are so slight that they are of value only to the trained specialist and they have little significance to many physicians—those who are most apt to see the early cases. Much as this is to be regretted, there is no prospect that earlier diagnoses will be made in the future if we continue to be dependent largely on the physical examination. The dictum, no lung findings, no tuberculosis, has found too wide acceptance. In view of this, I feel that we should come more to consider the subjective findings and the general aspect of the case during the silent interval and during the succeeding interval marked by physical signs that are not striking. The adoption of a different attitude toward the early cases, with a definition of them as regards their general condition and with more regard for the subjective, and less for the vague

*Read at the Sixty-third Annual Meeting of the Illinois State Medical Society, at Peoria, May 22, 1913.

or absent objective findings, will work a material improvement in their earlier identification.

The fact that tuberculosis may be present without lung findings should enable us to establish a diagnosis for working purposes which, while not disregarding the physical signs, will obtain in the absence of them. If we get tuberculosis at the most advantageous period for treatment, we get it almost before we can make an exact diagnosis. The deceptiveness of early tuberculosis lies in the apparent good health of the subject, coupled with the absence of lung findings, and this fact is not sufficiently appreciated, namely, that there is a large group of cases of early tuberculosis that do not present physical signs during the most vital period of the disease as regards treatment—the incipient stage. To lay too great stress on the physical examination may lead to error. To deny the presence of tuberculosis by reason of their absence will invite disaster if the tread of subjective symptoms, malaise, cough and afternoon temperature are not considered equally with the physical findings. As illustrative of this group, I have selected three cases showing varying phases of the early appearance of tuberculosis of the lungs without physical signs, in two of which definite lung findings later appeared to confirm the diagnosis. In the third case, the patient has thus far been able to keep the disease in abeyance, and it has never progressed to the stage where lung findings are present.

Case 1. A woman aged 35 years, married; family history negative, previous illnesses, two attacks of pleurisy, two and five years ago. She complained of malaise and prostration, cough, without expectoration, of three weeks' duration. The tuberculin test was positive. She had a daily afternoon temperature running between 99° and 100° during the first month that she was under observation, during which period the lungs were negative to many examinations. Lung findings later developed in the right infrascapular region.

Case 2. A man, aged 25 years, married, no children; family history, has one sister suffering from tuberculosis. Personal history negative. He had had a cough with some expectoration for four months on first coming under my observation, but the tubercle bacilli were not found. He had lost in flesh 10 pounds, and proportionately in strength, so that he was often obliged to give up his work for several days at a time. The temperature was found to range from 99.5° to 101°. It was six weeks thereafter before lung findings were discoverable, and nearly six months after the first subjective symptoms developed. Fine scattered rales, with harsh breathing and impaired resonance were heard well below the clavicle on the right side. The tuberculin test was positive.

Case 3. A woman, aged 37 years, married, five children, has been under my observation for one year. The family and personal history are negative. One year ago she began to experience malaise, and prostration. She developed a cough, which has persisted intermittently since then, but without expectoration. For several months she had an afternoon temperature above 99°, and occasionally 100° or more. Her temperature remained normal for several months after close application to treatment with but occasional lapses. She recovered her strength, the cough diminished, and she was practically recovered. She has had a return of all symptoms for two months, cough, temperature and malaise, and since then on resuming treatment has again thrown off the infection. There was loss of flesh. The tuberculin test was positive. During this entire period there was never any discoverable evidence of disease in the lungs or elsewhere. Examinations of the blood for plasmodia were negative (she had previously been subject to malaria).

These cases are selected from a number of similar cases as illustrative of a group of cases of tuberculosis in which for a varying period of time no lung lesion can be definitely located. The symptom complex is sufficient to justify the diagnosis, at least for the purpose of treatment, and to characterize them as suspected incipient cases. They are cited to demonstrate the fact that tuberculosis of the lungs may be present without physical findings.

Therefore it will be a safe rule to follow, with the speediest return to health, to characterize a case having the triad of symptoms, malaise, cough with or without expectoration, and daily afternoon temperature as incipient tuberculosis in the absence of confirmatory physical signs. Such a patient should, of course, be placed under observation, with the two-fold object of a more accurate ultimate diagnosis and of actual treatment at a time when treatment is most speedily effective. Many such cases recover, as in the third case reported, without ever manifesting the objective signs of tuberculosis, the disease never having progressed sufficiently to give rise to them. The great majority, however, go on to develop the active signs of tuberculosis. About 10 per cent of the cases of early tuberculosis that I have seen do not present lung findings at the first examination, or during the first few weeks of obser-

vation. A good many of them show the first evidences of the disease in some other portion of the lung than the apex. According to Grawitz, 12 per cent of the cases of tuberculosis of the lungs originate outside of the apices. It will be more readily understood that physical signs are apt not to be present in incipient tuberculosis when we remember that areas at the surface of the lung must attain an extent of four to six centimetres and a thickness of two centimetres before they are capable of altering the pulmonary resonance, and that smaller foci, such as lie deeper than five centimetres entirely escape observation. As the individual tubercle usually requires two to three weeks for development, a considerable time must elapse before a tubercular focus can attain anything like the size necessary to become manifest by percussion. This holds true even of the apices, in which the vibrating mass is of considerable size, and in which pathologic areas even smaller than the minimal size are at times discernible clinically. Moreover, so long as they are isolated and separate tubercles, there will be no auscultatory variation, and so long as there is no erosion of the mucosa by the growing tubercles, there are not apt to be tubercle bacilli in the sputum. It is only when the tubercles extend to a large number of adjacent alveoli, or in fact some time after the first infection, that we are able to detect any changes by auscultation. This is the silent period as regards tangible objective signs—the period between the date of first infection and the appearance of the objective evidences thereof. This is the true incipient tuberculosis.

The most striking thing about the early cases is that the weakness of which they early complain is severe, out of all proportion to the appearance of robust health present in many instances. This loss of strength is commonly encountered early in the course of the disease, before the secondary anemia and emaciation are present to which it may later be attributed. It is probably due to the absorption of tubercle proteins. Consumptives frequently manifest this weakness long before the cough or other subjective symptoms are noticed, and questioning will develop that there has long been an aversion to work, a weariness and exhaustion with no apparent cause. Many times this is so insidious in its onset that the patient hardly realizes when it first appeared.

Associated with the syndrome of cough, malaise and temperature, which are suspicious if not pathognomic, there are a variety of other manifestations, chief among which are hoarseness, often present early, and almost invariably noted later, hemoptysis and pleurisy. It is important to note that the two later symptoms may have been present months or years before the outbreak of the pulmonary lesion, or again they may introduce it. There are moreover, a train of secondary symptoms that may tend to obscure the essential ones. These are to be noted in order that they may be given their proper proportion. Following the malaise and the initial symptoms come sooner or later the effects of the lung invasion upon the health, with the deviation from normal color, and the loss of weight, and the manifestations of weakness of physiologic function. Particularly loss of appetite and gastric disturbance are often associated with the prostration and may be so marked as to overshadow the real condition. Again the dyspnea, or the chilliness, may throw the unwary off his guard.

The symptoms may then be divided into three groups; first, the essential symptoms, the malaise, cough and temperature; second, the associated symptoms, also directly of a tubercular origin—the hemoptysis, hoarseness and pleurisy; and third, the secondary symptoms, due to the commonly associated gastric disorder or the secondary anemia and having no particular relation to the tuberculosis as such. This latter group is mentioned chiefly in order that these symptoms may be given their proper value lest they mask the real condition. This they are apt to do in the very group of cases under consideration —those which show no lung findings. It is easy therefore to see how the not infrequent error of mistaking tuberculosis for a gastric disorder, for instance, may arise, when the gastric symptoms are unduly prominent and obtrude themselves upon one's attention too insistently.

So much has been said concerning physical findings that it has come to overshadow the subjective symptoms in the mind of the physician and the accepted picture of early tuberculosis is one of rales and dullness, instead of a picture of small scattered tubercles that give forth no sounds by which they can be identified, but which are manifested in the patient in subjective symptoms. The physician must appreciate that the early case

is a barren one from the standpoint of physical examination.

In closing, let me emphasize again:

1. That there is a silent period in every case of incipient tuberculosis of the lungs, during which objective signs are lacking.
jective signs are lacking.

2. The absence of lung findings should never of itself, in the presence of other suspicious circumstances, allow us to rule out tuberculosis.

3. There is a constant group of symptoms whose presence should lead us to suspect tuberculosis, irrespective of the presence or absence of lung findings.

4. A group of secondary or subsidiary symptoms may so eclipse the essentials, that in the absence of pulmonary evidence of the disease, we are apt to be lead astray.

DISCUSSION

Dr. John Ritter, Chicago: The paper read by Dr. Miller is very interesting and instructive. I have been engaged in tuberculosis work for some time, now devoting my time almost exclusively to it, and the remarks made by the essayist with reference to early tuberculosis and diagnosis are to the point. We physicians too often look for the physical signs when we should depend upon and look more particularly to the clinical picture. And very often the clinical picture tells us much more than the physical signs. There is the stage of what we may call the pre-tuberculous and when you get rales, increased fremitus, a high pitched note, the breath sounds increased, the patient has already long passed this pre-incipient stage and is positively tuberculous. We should try to make the diagnosis in these cases before the physical signs appear. Very often the use of tuberculin comes to our aid in these cases. In about 30 per cent of the cases of incipient tuberculosis, where the clinical picture is positive but the physical findings meager, the injection of one milligram of tuberculin will bring out rales, where you before only suspected the condition but you could not prove it. Give a patient an injection of one milligram of tuberculin, take the temperature and pulse before giving it, say the temperature is 99.5, with a pulse of 80 or 90; the next morning the patient comes back with a temperature of 101.5 or more, with a pulse of 100. If now you make a careful examination, you will find over the apex in about 30 per cent of the cases distinct rales. You will find an hyperemic area about the size of half a dollar at the point of injection. Watch the case and you will find that rales can be heard distinctly for two or three days, but when the hyperemia disappears at the infected point the rales disappear also, and you are in the same position as you were before, but you have made the diagnosis in the meantime. In those cases tuberculin comes to our aid.

TUBERCULOSIS OF THE KIDNEY*

R. E. Barrows, M. D.

CAIRO, ILL.

Renal tuberculosis occurs most commonly between the ages of twenty and thirty. However, it may occur in childhood and not infrequently in persons in the third and fourth decades of life. Men and women are about equally affected. Among the predisposing causes of renal tuberculosis are a low degree of vitality or a lowered resistance against infection and changes in the kidneys which favor infection, as congestion following traumatism, renal stasis, calculous, inflammations and abnormal mobility. Gonorrheal infections also predispose to tubercular infections in the genito-urinary tract. The exciting cause is the tubercle bacillus which gains access to the kidney in a great majority of the cases through the blood stream.

Tuberculosis of the kidney may be a primary or secondary infection. Strictly speaking it is in the great majority of the cases a secondary infection, in the sense that a focus of tuberculosis occurs in some other part of the body, as the bronchial or mesenteric glands, bones, lungs or elsewhere, the bacilli derived from such sources infecting the kidney through the blood. By a primary infection we mean that it is the first organ involved in the genito-urinary tract. Only one kidney is involved in the early stage of the disease in 90 per cent of the cases.

PATHOLOGY.

In describing the pathologic anatomy of renal tuberculosis, it is essential to distinguish between the descending or hematogenous and the ascending or urogenital modes of infection. In the hematogenous form the bacilli enter the kidney through the blood stream from the general circulation. They are arrested in the parenchyma, either of the upper or lower pole, the central portion being the last affected, as a rule. Here they begin a process of tissue destruction not unlike that in other organs of the body. The lesions are at first small areas of round cell infiltration, which coalesce and form hard grayish or yellowish nodular masses or tubercles. These in time soften and necrose, resulting in cavity formation, which contain a characteristic cheesy detritus. These areas are usually surrounded by in-

*Read before the Alexander County Medical Society, July 17, 1913.

terstitial fibrous tissue. Not infrequently as the process spreads by direct extension a tubercle will break down and rupture into the pelvis of the kidney, resulting in a large ulcerating lesion, discharging tubercle bacilli into the urine, infecting the ureter and lower urinary tract by direct urinary contamination. Less frequently, and as a rule only after the process has become more extensive, a tubercle may rupture through the capsule of the kidney into the peri-renal tissues resulting in a tubercular peri-nephritic abscess.

In the ascending or urogenital mode of infection, the ureter and renal pelvis are at first affected. Their walls may become thickened and dilated or ulcerated and stenosed. After the ureter and bladder have become involved, the infection frequently travels up the opposite ureter, infecting the second kidney. Most cases of renal tuberculosis, which run a chronic course, or are not treated early by surgical means, become secondarily infected by pyogenic organisms, most commonly with the colon bacillus or staphylococcus, which not only hastens the process of tissue destruction, resulting in the formation of abscesses, pyelonephritis and pyonephrosis, but changes the clinical picture, by giving rise to such symptoms as renal pain, rigors, high fever, leucocytosis, etc.

SYMPTOMS AND CLINICAL COURSE

The symptoms of renal tuberculosis are variable and indefinite. A tubercular process may be present in the kidney for months or years, without producing any symptoms referable to the kidney itself. In fact renal symptoms are the exception, rather than the rule, until the disease has become well advanced.

When the focus ruptures into the pelvis of the kidney a sudden, but usually moderate hemorrhage, may result. This is followed by painful and frequent urination. This symptom, painful and frequent urination, often occurs early and is perhaps the most constant and persistent symptom of renal tuberculosis. It occurs both night and day, and becomes more marked after the tuberculous process invades the bladder. The pain occurs during the urinary act and at its termination. Polyuria is a very common and important symptom. Suter states that of his 60 patients 53 presented symptoms of vesical catarrh; only 7 complaining of pain in the kidney region. Kummel says, "My experience teaches that every case of cystitis, in women especially, which can not be attributed to a gonorrheal infection or to infection introduced by a catheter, should be suspected of being tuberculous and calls for repeated and thorough examination for the tubercle bacillus and the employment of whatever other modern diagnostic resources we have at hand."

A sudden moderately severe hematuria may occur as an early or initial symptom. Disappearing after a day or two, we may be mislead into believing that the danger which is just beginning has passed. The hemorrhage is usually not so severe as that caused by neoplasm, nor attended with so severe pain as that due to renal calculous. Blood may be entirely absent from the urine at times, and visible to the naked eye only at intervals of months, but it can be frequently and in some cases constantly demonstrated microscopically. When pain in the loin occurs, it is usually more or less steady and of a dull aching character. Renal colic may result from the passage of blood clots or masses of necrosed tissue.

The most common systemic symptoms of renal tuberculosis, which usually occur sooner or later in the course of the disease, are loss of weight, general weakness, anorexia, fever and rapid pulse. However, like tuberculosis elsewhere in the body, these symptoms may not appear until the disease is well advanced. When secondary infection occurs, and especially in those cases in which a pyonephrosis or peri-nephritic abscess develops, marked septic symptoms supervene. In this stage high temperature is present, rigors and sweating frequently occur and loss of weight, strength and appetite may be very marked.

DIAGNOSIS

The mortality of renal tuberculosis will be lowered and our operative results improved, in direct ratio to the time at which we make a diagnosis and the proper surgical treatment is instituted. In our efforts to arrive at a correct diagnosis we must aim to determine 1, the presence of tuberculosis of the kidney; 2, if present, which kidney is involved; and 3, the condition of the opposite kidney.

To determine these points, we may resort to the following methods of diagnosis:

1. The Symptoms and Physical Signs. The symptoms have already been described. The patient should be examined for evidences of tuber-

culosis in other parts of the body. Palpation of the loin may reveal nothing. A tumor may be present, but is more often due to a complicating perinephritic abscess or a closed pyonephrosis than to an uncomplicated tubercular infection. Tenderness is often present and is at times extreme. Muscular rigidity is also often well marked.

2. Urinalysis. The urine usually shows an increased amount in a twenty-four hour specimen. It is practically always acid in reaction and of a low specific gravity. Albumin and casts are usually but not always present. Before mixed infection occurs, the urine from a tubercular kidney contains little pus, but when mixed infection is present there is a definite pyuria. The tubercle bacilli are present in the urine in practically all cases when the lesions communicate with the pelvis of the kidney. They may be demonstrated microscopically in the centrifuged urine in over 80 per cent of the cases.

3. The Tuberculin Tests. The tuberculin reactions are of value in certain cases as an aid to diagnosis. A positive diagnosis, however, simply indicates the existence of tuberculosis somewhere in the body, but does not throw much light on the conditions in the kidneys. The subcutaneous injection of Koch's old tuberculin is the most reliable test in adults. The vaccination test of von Pirquet or the inunction test of Moro are very reliable in children.

4. Animal Inoculation. Animal inoculation or the injection of some of the suspected urine into the peritoneal cavity of a guinea pig is the most reliable single diagnostic test. The injection should be made under strict aseptic precautions. If alive at the end of six to eight weeks it should be chloroformed, an autopsy performed and a search for the tubercles made in the peritoneal, mesenteric and inguinal glands.

5. Cystoscopy. The bladder may appear normal through the cystoscope, or later in the course of the disease characteristic changes occur in the bladder wall. These changes are evident about the mouths of the ureters, and are characterized by inflammation, small nodular growths or tubercles and ulcerations. The ureters may be swollen and edematous. The diagnosis of vesical tuberculosis is always strongly suggestive of renal involvement, as vesical tuberculosis is always secondary to tuberculosis of the kidney, epididymis, or prostate.

6. Ureteral Catheterization. Ureteral catheterization has in recent years been of great value in the diagnosis of pathologic changes in the kidneys. By its aid we can determine the presence of both kidneys, and can obtain a specimen of urine from each, by means of which we can estimate their comparative functional capacity. It is of the utmost importance to determine the condition and functional capacity of the other kidney before advising the surgical removal of the diseased one.

The four most important methods for determining the functional sufficiency of the kidneys, by means of the separate urines obtained by ureteral catheterization will be briefly described.

1. The Estimation of Urea Excreted by Each Kidney. It has been proved that both healthy kidneys excrete exactly the same amount of urea, during and at the same time. If the amount is diminished on one side it indicates a diseased condition in that kidney. This test is very reliable and can be easily made by means of the Doremus ureometer.

2. The Phloridzin Test. This test is based upon the fact that, when phloridzin is injected into the circulation, sugar is excreted by the kidneys and appears in the urine. One-tenth grain of phloridzin is injected subcutaneously. Within a half hour as a rule sugar can be demonstrated in the urine. A normal kidney will produce one per cent or more. A lesser amount indicates a defective kidney.

3. Cryoscopy. Cryoscopy is a comparison of the freezing points of blood and urine, and depends upon the number of molecules held in solution. Although some urologists favor and utilize this test, it appears to me to be unsatisfactory and impracticable, inasmuch as it requires a rather complicated technique for its performance, and other pathologic conditions outside of the kidney causes it to vary and renders the final results unreliable.

4. Chromocystoscopy. In this test indigocarmine (20 cc. of a 0.4 per cent solution), is injected deep into the muscle of the buttock. The drug should appear in the urine of a healthy individual within 5 to 20 minutes and is delayed in the presence of disease. Phenolsulphonephthalein has also proved of value in this test. It is

given in a grain 0.1 dose, subcutaneously and should appear in the urine in from 10 to 20 minutes. This test does not necessitate catheterizing the ureters, as the coloring matter in the urine can be viewed through the cystoscope as it issues from the ureter.

I shall not attempt in this paper to give a complete differential diagnosis of tuberculosis of the kidney, but will merely name those conditions which must be considered in making a diagnosis. They are suppurative conditions in the kidney, neoplasms, renal calculous, hemorrhagic nephritis, movable kidney, cystic kidney, and the so-called essential hematuria. These can usually be excluded, by means of a careful clinical history, physical examination, laboratory methods, cystoscopy and the x-ray.

PROGNOSIS.

The prognosis of renal tuberculosis depends upon the nature of the lesion, the age of the patient, the presence of lesions elsewhere in the body, the time at which a diagnosis is made and the time and nature of the treatment instituted. In former years the operative mortality was 40 to 50 per cent. Since the introduction of modern methods of diagnosis, statistics have been collected on 292 cases by Watson and Cunningham with an average mortality of 8.8 per cent. The prognosis of cases treated medically has proven unfavorable. There may be temporary improvement, but few authentic cases of recovery have been reported. Bevan states that in 90 per cent of the cases, the lesion is in its early stage a unilateral affair. Therefore an early diagnosis is of the greatest importance for the carrying out of a successful treatment. Braash, in reporting the operative results of the Mayo clinic, states that the immediate operative mortality in 203 cases was 2.9 per cent; 82 per cent were alive one year after operation; 69 per cent being well or greatly improved, and 13 per cent showed little or no improvement in bladder symptoms. Of this later group of cases 83 per cent had had their infection more than two years before operation.

TREATMENT

The generally accepted method of treatment of tuberculosis of the kidney is complete removal of the diseased organ as soon as the diagnosis is made. Keys states that the only contra-indication to nephrectomy is the existence of tuberculous lesions elsewhere in the body of such gravity as to prohibit the operation. Such prohibiting lesions may for example exist in the lungs and be of such severity as to prohibit any capital operation; or the opposite kidneys may be so gravely affected as not to be capable of supporting life.

Israel in 1911 collected statistics of 1,023 nephrectomies for kidney tuberculosis, which showed that 75 per cent were permanently cured. Rovsing reports 145 nephrectomies for renal tuberculosis with 7 deaths, or a mortality of 4.8 per cent.

In cases which are not suitable for operation, *i. e.*, cases with advanced lung involvement or where the opposite kidney is already infected or functionally incapacitated from other pathologic conditions and also in those cases which refuse operation, we can only resort to medicinal and palliative methods of treatment. Among these are included rest, hygienic surroundings, nutritious diet, and the internal administration of urotropin, tonics and narcotics to relieve pain. Tuberculin has given disappointing results and I believe we should not waste time in its administration. It may be of some value in those cases where operation in contra-indicated. All persons having a tubercular kidney, even after removal of the diseased organ, should be considered as subjects of latent tuberculosis and kept under supervision and medical treatment.

In some of these cases a complicating pyonephrosis may give rise to severe toxic symptoms, necessitating a nephrotomy with drainage, which may result in a permanent fistula.

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ANTI-TYPHOID VACCINATION*

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The history of typhoid prophylactic vaccination covers only a few years, and to most of you is more or less familiar. I will, therefore, present only a few of the more important steps in the development of this most effective weapon of defense against one of the diseases of mankind, and one which has always been the special scourge of armies in camp and field.

The history of typhoid prophylactic, can roughly be divided into two stages; the first period, the early experimental work of Pfeiffer and Kolle, and that of Wright and the Boer War and the use of it by the Germans in the Hereros campaign in South Africa.

The second period is the present one, beginning with the work of W. B. Leishman, and continuing to the present, when all of the principal armies are using it with very little variation in technique.

France, by a circular March 6, 1913, rather tardily fell into line with her army in Morocco, Algiers and Tunis.

In 1896, Pfeiffer and Kolle reported the result of anti-typhoid vaccination in two men in whom, by carefully controlled investigation, it was shown that the same anti-bodies were found in the body following these inoculations, as were found following an attack of typhoid, and which suggested that this method might be of use in limiting the spread of epidemics of typhoid.

The principal credit for placing anti-typhoid vaccination upon a practical working basis, is due to Sir A. E. Wright, who at that time was connected with the British Army Medical Corps, and who in 1898, vaccinated about 4,000 men of the British Indian Army, and in 1899 to 1902, furnished 400,000 doses to the English troops in the Boer War. While this work was convincing, it fell somewhat short of expectations, due to various factors. Poor records were kept; in a large number of cases there was confusion of the records regarding typhoid and smallpox vaccinations. A still more illuminating explanation of the partial failure has been given by Sir William B. Leishman of the Royal Army Medical Corps, who was associated with Wright at Netley, and to whom fell the duty of preparing the vaccine. He now believes, after further study, that the variation in results was due to the method of sterilizing the cultures. He believes, and has demonstrated, that the degree of heat used destroyed, to a large extent, the protective properties of the vaccine.

In 19,000 vaccinated men in the South African campaign in which fairly accurate records were kept, it was shown that the incidence of typhoid was one-half, and the death rate of these was diminished about two-thirds that of the unprotected. This was encouraging.

In the latter part of 1902 considerable opposition developed in the English service, and the inoculations were discontinued, but were reintroduced in 1904, upon the recommendation of a commission appointed to investigate the subject.

Profiting by previous experience and by the appointment of special officers who kept careful records and made accurate diagnoses by laboratory methods, the results were such as to convince even the most skeptical.

Not wishing to inflict statistics upon you, I will only state that among 5,473 inoculated men there were 31 cases of typhoid, with 2 deaths. Among 6,610 uninoculated there were 187 cases of typhoid, with 26 deaths. These results approach those of the U. S. Army in the maneuver division at San Antonio in the Summer of 1911 of which more later.

Following the Boer War, the next extensive trial of anti-typhoid vaccine was in the German Colonial Army in Southwest Africa during the Hereros' campaign from 1904 to 1907.

In 1904, the number of cases of typhoid among the German troops in South Africa was 226, notwithstanding that they had the accumulated experience of our Spanish-American War to aid them in carrying out extensive general sanitary measures for the prevention of this disease. The condition was becoming alarming. The military authorities laid the matter before Prof. R. Koch, who advised prophylactic inoculations.

As a result of this policy the cases fell from 226 in 1904, to 43 in 1907, under the same general sanitary conditions. Among the total force of 16,496 men in the expedition, there occurred 1,277 cases of typhoid, and a study of the distribution shows the undeniable advantages of the prophylactic. The proportion of cases occurring

*Read before the joint meeting of the Morgan and Cass County (Ill.) Medical Societies, August 14, 1913.

in the vaccinated and unvaccinated was as 5.09 is to 9.84.

Without figures, one may briefly summarize the work of the Germans by saying there was a reduction among the vaccinated of one-half the number of cases; a much higher percentage of light attacks; and a much lower percentage of fatal cases.

The Germans have made it a practice from the start, of giving three doses before calling the immunization complete. This being the method universally used at present.

Much of the opposition in England following the use of the vaccine during the Boer War was the exaggerated idea of the importance of the so-called *negative phase,* which was promulgated by Wright. He believed that immediately following an injection, the body lost some of its protective properties, and became more susceptible to the disease. We now know that with the present doses, this does not occur, but that protective bodies begin to be formed at once.

From the first, our work with the prophylactic, has been done with the utmost thoroughness, in respect to the preparation of vaccine, administration and keeping of records.

During the Summer of 1908, Captain (now Major) F. F. Russell, Medical Corps, U. S. Army, was sent to Europe to make a study of the methods in use in England and Germany for the prevention and stamping out of typhoid fever epidemics, both in the army and civil population. Upon his return to the United States, a special board was called to consider the subject.

Upon this board were the following eminent men:

Drs. V. C. Vaughn, W. T. Councilman, J. H. Musser, Alexander Lambert, Simon Flexner, W. S. Thayer and F. F. Russell.

All of these, with the exception of Major Russell, being members of the distinguished list of the Medical Reserve Corps, and are known to most of you.

This distinguished board met in Washington and, after a thorough investigation, arrived at the following conclusions:

1. The board is convinced that the practice of anti-typhoid vaccination is both useful and harmless, and that it offers a practicable means of dimishing the amount of typhoid in the army, both in peace and war.

2. It finds that the experience to date with anti-typhoid vaccination justifies it in recommending the introduction of the practice in the regular and volunteer armies in time of war.

3. It recommends the immediate introduction of the practice of voluntary vaccination against typhoid in the Hospital Corps, Army Nurse Corps, and in any expedition of troops from the regular army which is ordered to take the field for active operations, and further, that an opportunity be given for volunteers from the army as a whole, to be protected by vaccination against typhoid.

Following this report the prophylactic was administered to such men as wished the protection afforded by the vaccine. The careful records kept showed such uniformly excellent results, with no untoward effects in any case, that when the movement of troops began to Texas in the spring of 1911, it was ordered that all men who were sent to the maneuvers, who had not been protected would be vaccinated at once.

This was later followed by the following General Order No. 76, War Department, June 9, 1911. Extract: 2. Hereafter, the typhoid prophylactic will be administered as soon as practicable, after enlistment, and before the men are sent away from depots or posts at which they are enlisted, to all recruits except those over 35 years of age.

In September, 1911, the order making the prophylactic compulsory for the entire army came out in General Order No. 134. This ordered that all men under 45 years of age who have not been vaccinated against typhoid, or have not had a well developed case of typhoid be given the treatment at once. Men who have not had the prophylactic within two years are to be given the treatment.

Since this order was issued, all men in the service have had the prophylactic administered, and all incoming recruits are given it as soon as sworn in

Our army then, as a whole is immunized to typhoid. Let us see what has been the result.

During the period of March 10 to July 10, 1911, the maneuver division at San Antonio, Texas, with a mean strength of 12,801 men, all treated with vaccine, was encamped near the city, a large part of the time in a profanity provoking mud, partially surrounded by the city over which

the military had no control, and in which typhoid at that time was prevalent, there being 49 cases in the city with 19 deaths during this period of four months. Only two cases of typhoid developed in the division, one in a private of the Hospital Corps, who had received only two of the required three doses, and the other in a civilian employe, who had not received the prophylactic. The case of the partially protected man was so mild that the diagnosis was made only by blood culture. (All cases of fever of over 48 hours' duration were cultured.)

Contrast with this the division of troops encamped at Jacksonville, Fla., in 1898, of about the same strength and under about the same conditions and for approximately the same time. This division had 2,693 cases of typhoid with 248 deaths. This was about the average incidence in the other camps at this time.

That this result was not entirely due to improved general sanitation is proved by a study of the typhoid rate in the Philippines in 1910 before immunization was in effect, and in 1911 after a large part of the American troops had been immunized.

In 1910 there were 31 cases of typhoid among the American troops, with two deaths, and 13 among the Philippine scouts with 1 death. This prior to immunization. In 1911, there were 12 cases among the partially immunized Americans and 12 among the non-immunized scouts. The number of men in the American troops and scouts was about the same both years. The incidence among the partly immunized Americans was less than half, while the rate among the non-immunized scouts remained about the same. The general sanitation was the same both years. These results must be considered absolutely convincing that anti-typhoid prophylactic does prevent typhoid to a large extent.

That the immunity is not absolute we know from the fact that in 1911 among 80,000 vaccinated men, there were 12 cases of typhoid with one death, and in 1910 among 15,000 vaccinated men there were six cases with no deaths. These diagnoses were clinical in many cases, so probably some of them were para-typhoid instead of typhoid. During the last year it has been demonstrated that para-typhoid is more common than usually thought. In India, Col. Firth reports 104 cases of para-typhoid to 170 cases of typhoid, all based upon laboratory diagnosis. Anti-typhoid vaccine does not protect against para-typhoid. Medical officers are under instructions from the war department to endeavor in all cases to differentiate the two diseases by laboratory methods, that the records be more accurate.

A brief outline of the method of preparation and administration will be of interest. The culture of typhoid organism used was isolated from the spleen of a fatal case several years ago. It is not necessary to use a virulent culture, the one in use is considered avirulent, but one which produces large quantities of anti-bodies. It is grown for 18-20 hours upon uniform sized agar tubes and the growth of each washed off in about 2 cc. of physiologic salt solution. This emulsion is well shaken to break up clumps, and a sample taken for counting.

The emulsion is then sealed in 50 cc. tubes and heated at 60° C. for one hour. Cultures are made by aerobic and anaerobic methods, and samples are injected into a mouse and a guinea pig to insure against the unfortunate repetition of the experience of tetanus in India and plague in Manila.

The vaccine is then diluted according to the count, so that one cc. contains 1,000,000,000 bacteria. Before sealing in the ampoules, 0.25 per cent tri-cresol is added as a matter of safety.

The vaccine keeps well, probably one to two years, and freezing does not impair its efficiency to any great extent.

The prophylactic is administered subcutaneously in the region of the insertion of the deltoid after the skin has been sterilized by tincture of iodin, preferably about four o'clock in the afternoon, as the most severe reaction will be over by the next morning, and the individual thereby sleeps through the greatest discomfort.

The first dose for an adult is 500,000,000, ½ cc. of our present dilution. The second dose is given in ten days, and the third ten days later, these last two doses numbering 1,000,000,000 each. The period of immunization thus covers, from the first to the last dose, 20 days.

There are, as a rule, no symptoms until a few hours have passed, when both a local and general reaction may appear. The local reaction is manifested by a red indurated and tender area 1-2 inches in diameter at the site of inoculation, and slight axillary adenitis which never suppurates.

This subsides in 36 to 48 hours, and is insignificant in severity.

The general reaction is often mild or absent. The general reaction is usually somewhat like the beginning of an acute cold, headache, malaise and chills, often repeated four or five times during 24 hours. More severe cases show nausea, vomiting, occasionally diarrhea, and infrequently herpes labialis.

The reactions are classified by Russell as follows: A moderate reaction being one showing a temperature from 101 to 103; over 103 being classed as severe:

Dose.	No. of doses.	Reaction absent, per cent.	Reaction mild, per cent.	Reaction moderate, per cent.	Reaction severe, per cent.
1st	45,680	68.2	28.9	2.4	.3
2nd	44,320	71.3	25.7	2.6	.2
3rd	38,902	78.	20.3	1.5	.1

At Jefferson Barracks, a recruit depot, we have completed 11,007 cases of prophylactic administrations. This means 33,021 injections. Of these cases, 87 were admitted to hospital as having a reaction sufficiently severe to excuse them from work. As all recruits are vaccinated for smallpox at the time of enlistment, a large number of the admissions were suffering both from vaccinia and typhoid prophylactic. Again as prevention of epidemics is an important part of our work, infectious diseases are imported continuously and are with us practically always. A great number of these 87 admissions were admitted on account of the temperature rise upon suspicion of measles and other infectious diseases.

It is a conservative estimate that 50 per cent of the admissions which were diagnosed as reaction following typhoid, would not have been admitted if the patient had not had vaccinia, or had not been taken in on account of the suspicion of measles or other infectious disease.

We have seen no serious result in any of the 33,021 doses, and so far I have heard of only one, a case of neuritis in an officer, probably due to accidentally striking a nerve with the needle.

Occasionally a man the day after the prophylactic becomes weak and faint while at drill and has to fall out, but usually in a few hours is able to go on with his work, not necessitating admission to hospital, or any treatment.

Children bear the prophylactic well. We have administered it to children as young as 3 years. We encourage all families upon the post to have their children protected, and, to a great extent, they avail themselves of the opportunity. Children do not react so severely as adults. Usually the child is cautioned not to go out in the sun, otherwise it continues its play as if nothing had happened. I have never yet seen a child react even moderately.

The dose for a child is in proportion to its weight, the basis being a man of 150 pounds. Better a little more than less the exact proportion.

As the child is immunized in proportion to its weight, and its weight increases rapidly, it is advisable to repeat the immunization oftener than in adults.

How long does the immunization last? At present we do not know. There is no laboratory test to tell us and only long continued observation will determine. It appears to be at least 2 years, probably more. For our purpose in the army, once each enlistment was considered sufficient, when the enlistment period was 3 years, but under the present 7-year system, it will probably have to be repeated before the next enlistment. At present no provision is made for this, but, no doubt, will be before the men who are now serving under the 7-year enlistment period have served the 3 years at present provisionally considered the period of immunization, unless it be found that the immunity lasts longer than anticipated.

In regard to the treatment of typhoid by means of bacterins, at present there is very little literature upon the subject, and it seems the consensus of opinion is that the results have not been very satisfactory. It is hoped that future work may prove more productive of results.

The experience of the army in this work is so slight as to be negligible for the simple reason that there has been no epidemics since the vaccine has been used and the few isolated instances where it has been used offers no information of value as yet.

Typhoid fever is rated fourth on mortality tables; it is estimated to cause an economic loss of no less than $100,000,000 annually in the United States. In 1908, one man in every 200 contracted typhoid, and the death toll in the United States was 35,000.

Every person is at some time or other exposed to typhoid, and it is the duty of the medical practitioners of the country to see that anti-typhoid vaccination through a campaign of education be-

comes known and used in every community.

The trail has been blazed by the armies of the leading nations of the world, and if zealously followed, it will show a result in typhoid prevention only second to the results of smallpox vaccination.

INTRODUCTORY ADDRESS.*

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CHICAGO.

The present age is notable for many things. Not the least among them is the growth of the community spirit, the community conscience. Heretofore individualism has held supreme sway. The rule of guidance was, every man for himself and "the de'il tak' the hindmost." With the steady development of popular government, the idea has grown as never before that one's neighbor has interests that are identical with our interests. The union of these interests works to the advantage of both. It is the discovery of this fact that has stimulated the remarkable growth in these latter days of trusts, corporations, labor unions, business amalgamations of all sorts, united charities, religious associations, professional, literary, artistic and scientific societies. So rapid and recent has been the growth of this idea that many men do not yet realize it and as a result of their old education are struggling to use these new combinations and forces for their own individual profit. This is the reason for the unrest and troubles of the industrial world, of which we are observing so much nowadays. Men are slowly but surely being educated in this transition period that humanity is a unit, that men are the same everywhere in their hopes and desires, and that the mere exploitation of one's fellow creatures for the sake of personal gain, is not only an evidence of a primitive state of mental development but works ultimately to the detriment of the greedy one. That we are our brother's keeper is the great lesson that is being hammered into the human mind this twentieth century. It is the latest step in the inevitable march of the human race from mere animalistic egoism to divine altruism.

In this magnificent movement our profession is taking a glorious part, as shown in a thousand ways, one of which is the gathering together this morning here in Chicago, of psychologists and students of sociology from all parts of the country. Your deliberations and conclusions involve the very existence of our nation and the happiness of its citizens. Every means put forth to stay mental deterioration on the one hand and to enhance mental growth on the other strengthens the very foundations of our civilization. Pre-eminently do you exemplify the truth of the statement that "the proper study of man is man." *Mens sana in corpore sano* means, if it means anything, that he who makes the mind the subject of his investigations must be a deep thinker and a broad student of affairs. Mind being at the apex of human development, the study of mental phenomena means the study of the whole of mankind in all of its relations to the inner and outer world. What a magnificent program is thus laid out before you! How entrancing and stimulating the thoughts and suggestions it awakens! How deep into our national life and how far reaching into our future welfare, will its conclusions extend!

Note how a few of the greatest thinkers regard society and civilization. Then when you have done this place side by side the subject matter of this body's deliberations and its extreme importance with the average indifference and flippancy with which legislators, prominent men of affairs, and the populace generally regard it. Surely there is a crying need for the education of the people along these lines and all the simplicity and publicity that can be given to the facts upon which your discussions are to be based will redound to the benefit of all. Herbert Spencer regarded *society* as an organism, having a sustaining system analogous to the alimentary apparatus, a distributing system analogous to the circulatory, and a regulating system analogous to the nervous. Analogy, however, scarcely indicates the close intimacy between the regulating system of society and the human nervous apparatus. The origin of society is in an idea, whether that idea be elementary or elaborate, instinctive or rational. As "man is nothing without his mind," to use the words of Bain, society, whose regulating system constitutes its mind, could not exist without the latter. A mere aggregation of animals does not constitute a society any more than does an aggregation of trees. The term

*Read at a meeting of alienists and neurologists, held under the auspices of the Chicago Medical Society, June 23-25, 1913.

society and the study of society in the form of sociology are all but synonymous with the term psychology and the closest examination of the activities of the human nervous system.

Fiske has placed psychology at the head of all the sciences. It is the science of sciences, because the validity of our knowledge of all the sciences depends upon the validity of our knowledge of the phenomena of mind.

In the words of Giddings, "it appears that sociologic theories should start from psychologic premises, but that the correlation of all processes with the character of the physical environment should be recognized throughout."

As Fiske says, quoting from Buckle's History of Civilization, "The progress of mankind depends on the success with which the laws of phenomena are investigated and on the extent to which a knowledge of those laws is diffused"; or as Lewes puts it, "the evolutions of Humanity correspond with the evolutions of Thought," a statement substantially concurred in by Mill, Spencer and Comte.

"There can be no doubt," says Buckle, "that a people are not really advancing, if, on the one hand, their increasing ability is accompanied by increasing vice, or if on the other hand, while they are becoming more virtuous they likewise become more ignorant. This double movement, moral and intellectual, is essential to the very idea of civilization and includes the entire theory of mental progress." The study of mental phenomena and of the nation's mental state, which you are about to take up the next few days, is a study of civilization and of our nation's continuance. Material progress, of which we are inclined as Americans to be so boastful, is of minor importance as compared with the subject of your program. A nation's life is dependent upon its men, not upon its trade and manufactures; and men are what they are by reason of their mental faculties.

There are three distinct elements of possible danger to our national strength, namely, *undesirable and unassimilable immigration, increase of alcoholism,* and *the spread of venereal diseases.* It is a fatuous and foolish optimism that fixes its gaze upon the vast natural resources of our land and declares that these growing dangers can never overtake the nation's welfare. Statistics as well as general observation reveal only too glaringly the increase of degeneracy, mental instability, nervous diseases and insanity. The increased competition and struggle for existence, the growing spirit of self-indulgence and love of pleasure, the recent rapid accumulation of wealth and luxury, the spread of means for physical comfort and stimulation, and the relative neglect of self-restraint, self-discipline, moral exaltation and delight in the more intellectual pursuits are all too obvious. The inevitable result of such causes, when unchecked, are well known to the students of the mind and have been more than once illustrated in the history of civilization.

Take for instance the question of immigration from Europe alone, to say nothing of our great negro problem in the south and the so-called "yellow peril" in the west. Up to the time of the Civil War the immigration was from the north of Europe and from among people whose racial traits and customs were not dissimilar to our own. At that time not more than 7,300,000 of these desirable colonists had come to our shores. They had come to settle and make their homes with us. They quickly amalgamated with their environment, adopted the ways of the nation, and soon experienced in their new home the feelings of genuine patriotism. After the Civil War there was a sudden and remarkable increase in immigration. In 1907 it reached its climax when in one month 128,000 individuals came from Europe, equal to the entire number that had arrived between the years 1820 and 1830. To assimilate such a vast horde must of itself be a gigantic task; but the assimilation is rendered all the more difficult by reason of the character of the immigration. These people have come from the lower strata of society in southern and eastern Europe. Poor and oppressed at home and stimulated by the glowing promises of the over-zealous steamship agents amongst them, they came to this land not merely to escape the poverty and distress of their own but to reap the golden harvest which they were told this Eldorado had in store for them. When they arrived, their last dollar spent and their families left behind to await their return, they crowded the slums of our great cities, dejected, ignorant, hopeless, because the golden promises of the agents did not materialize and they were devoid of means to return to their families. In 1907, 1,285,349 such immigrants more or less poured down upon our Atlan-

tic seaboard. Sixty per cent of the 10,000,000 representatives of these races of southern and eastern Europe that have come to our land in the last 20 years have settled in the four states, New York, Pennsylvania, Illinois and Massachusetts, chiefly the large cities. In the old colonizing immigration less than two per cent were illiterate; in this later immigration more than one-third of the individuals over 14 years of age could not read or write, and the purpose of their coming here was not such as to induce them to learn our language, our ways, or our form of government. One need not think twice, especially you alienists and neurologists to realize what such an influx means to the physical and mental health of those who constitute this immigrant horde and of those among whom they are packed in our great urban tenement districts. Ignorance, poverty, discomfort and disappointment result as a natural consequence in dissipation, filth, immorality, and disease. Crime, drunkenness and syphilis are bound to increase under such conditions. Illegitimacy, disastrous heredity, and degeneracy constitute the inevitable fruitage. Bodies are diseased, minds are stunted, and insanity increases. To say nothing of the enormous burden upon the body politic in the case of this growing mass of delinquents, what must be the state of the foundations of a nation resting on such a growing proletariat?

I am aware that your fatuous and foolish optimist again tries to brush away these alarming facts by stating that vice and insanity are not on the actual increase but are merely keeping pace with the increase of population. In this however he flies in the face of all reliable statistics and the opinions of all authorities upon nervous and mental disease.

In his monograph upon General Paresis, to take one disease alone, Kraepelin says "a certain increase of paresis may be admitted as highly probable. The experience, especially of larger cities, proves this. There the figures are so large and so continually growing, as for instance the rate of Berlin and Munich where the male paretics amount to 36 per cent, and in the Charité at Berlin where they reach 45 per cent, that the errors just mentioned are of little consequence."

Nonne, a high authority upon syphilis, while deploring the absence of reliable statistics upon the subject states that "the great increase of this literature in the last decade would cause one to think syphilis to be of more frequent occurrence than formerly," and that "from the standpoint of reason we can easily comprehend how syphilis might be more prevalent at the present time than formerly."

The same may be said of the use of alcoholic beverages though lately there seems to have been an awakening of the people to the dangers of drink in our complicated civilization. Neurasthenia, a far less serious malady to be sure and yet one that interferes with the normal mentalization of the individual to no small extent, is increasing. In the words of Oppenheim, "neurasthenia is a very common disease in our time. It affects chiefly those who live in large towns. Although it has possibly been in existence for all time, and has for long been known under the term "nervousness," there is no doubt that it has gained ground enormously within recent years with the ever-growing hurry and restlessness of social life and the enormously increased demands made by the struggle for existence and the craving for pleasure."

Lest there may be any doubt still lurking in your minds as to the increase of insanity, let me quote a paragraph or two from the last Institution Quarterly, the official organ of the Public Charity Service of Illinois, one of the states into which this late undesirable immigration has been pouring.

"The capacity of our hospitals is now fully exhausted. . . . The next annual increase in the population of these hospitals during the biennial period of 1913 and 1915 is estimated at 527. This figure is based upon the percentage of increase which has prevailed for a number of years in Illinois and other states. During the twelve months succeeding July 1, 1913, the state must make accommodations for 527 new patients in excess of all discharges and deaths, at $600.00 per bed. This net gain means an expenditure of $316,200.00 for housing, to say nothing of the increases necessary in power houses, laundries, quarters, attendants, repairs and the ordinary every-day maintenance. Considering these figures of net annual increase in patients, one is almost appalled at the future. The ideal hospital for insane is one of 1,500 or 1,600 capacity. At the rate of four hundred increase each year, Illinois can fill a new hospital every four years."

What an outlook for civilization, and in only

one state which, however, is like all other states in this respect! None but the unthinking and indifferent can fail of being aroused to a full sense of responsibility and duty as citizen in the presence of these gruesome facts.

Let us grant for a moment that our statistics in regard to the increase of insanity and nervous diseases are wrong or are erroneously interpreted. Let us admit that the increase is only apparent, corresponding merely with the increase of population or with the increased readiness of the people to seek hospital and asylum treatment. No one has ventured to say that these diseases are in the least on the decrease. So far as I know not one writer, however optimistic, has ever declared that, with our growing civilization, nervous maladies have been steadily declining. And yet is it not absolutely true that that is exactly what they ought to be doing to uphold our boast of being a highly civilized and progressive nation? Is it progress merely to stand still? Does it indicate scientific knowledge when that knowledge results in no real improvement? Nay, even the optimist must hang his head in shame today and admit that with all our greatness and enlightenment we have not yet caused any diminution of degeneracy, mental instability, insanity, and nervous affections. We are still in a stage of mere hopeful anticipation while we go on building hospitals to accommodate the ever-growing burden of mental defectives. This great sore in our national life is not seen, thus far, to be healing but is being merely segregated for the protection of the rest of the organism.

The origin of society and the progress of the human race toward civilization constitute the profoundest and most fascinating problems that the anthropologist has to deal with. The history of mankind, in its slow and laborious struggle from darkness to enlightenment, like a great minor symphony, resounds with the sad tones of frequent defeat and failure. Babylon, Persia, Egypt, Greece, Rome, once so powerful and exalted, where are they today? What elements of decay entered the lives and constitutions of the people who created and sustained during so many centuries those splendid nations? What was the inherent nature of the change that gradually but inevitably caused one nation after the other to steal away, like the Arab at night, into the silence of oblivion, leaving naught but a desert where,

"The hills,
Rock-ribbed, and ancient as the sun; the vales
Stretching in pensive quietness between;
The venerable woods; rivers that move
In majesty, and the complaining brooks,
That make the meadows green; and, poured round all,
Old ocean's gray and melancholy waste,
Are but the solemn decorations all
Of the great tomb of man!"

Fluctuation is the law of the universe and perchance, for aught we know, the melancholy truth that the "ultimate tendency of civilization is toward barbarism" may be as true today as it seems to have been in the past. What then is the outlook for our American nation and civilization? Will some future historian, like Gibbon amid the ruins of Rome, picture to his astonished contemporaries the vanished glories of our noble and beloved country; or on the other hand, will he, like Livy, the proud citizen of Rome, reflect with a loving tenderness upon our past and present and portray them as the lower steps of the ladder whereon the nation has climbed to the higher and more brilliant civilization of his day? The question is vital to the American who truly loves his country and he inquires earnestly of history and of science to tell of the signs, if there be any, that our nation is falling or rising. He asks anxiously if there is not something, like the steam-gauge upon an engine, that can positively be depended upon, if closely watched, to inform us whether the pressure of civilization is moving above or below the danger point. It would seem that science is ready to offer such an index as it has never been able to offer before and that this index is the state of the nervous system of its people in all of its functions. In other words, mentalization, the culminating function of that system, being the basis of civilization, it follows that a direct parallelism obtains between the nervous organization of a people and the status of that people's civilization and stability as a nation. This fact which has been recognized only of late in all of its wide bearings is the first conclusion I would emphasize before you this morning. The second is that racial influences, including the two subsidiary questions of alcoholism and venereal diseases are more potent than we are wont to imagine in deteriorating the nervous organization of a nation and so in bringing about

the downfall of that nation. On the neurologic side, here in America as elsewhere, we can see the slow, steady, insidious advance of nervous deterioration; on the sociologic side the evidences of the same progressive decline are all but too glaringly obvious. The picture is threatening and full of warning. The redeeming feature whereby we may hope to save our nation from going the way of Egypt, Rome, and Greece is that we know more than they ever dreamed of about the human nervous system and its relationship to intoxication and sensuality on the one hand and to racial integrity and national stability on the other. This knowledge, acquired through neurology, gives us a power which the ancients were wholly in want of and which if rightly wielded will save our country. I congratulate you that you are the custodians of this knowledge and I rejoice that such meetings as these are from time to time held to arouse the people and their representatives in government not only to the dangers to our national existence, but to the nature of those dangers and the means of nullifying them. May your deliberations and conclusions be wise, emphatic, and widely published, for they are upon a theme that is most vital to every citizen of these United States.

DEGENERATION COMMON TO ALCOHOLISM AND INEBRIETY*

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A few years ago, any attempt to present the scientific study of the degenerations common to alcoholics and inebriates, would have been regarded as empirical. Forty years ago, the first papers I read on the disease of inebriety before medical societies were tolerated but met with a silent contempt and skepticism. Most of the profession from the leaders down considered all writings of this character extravagant, foolish and unscientific.

No one seemed to regard spirit and drug addictions as neuroses or diseases but on the contrary as mere moral lapses and weaknesses of mind and body, which required clerical and other than medical help. The fact that from Hippocrates down many eminent men had written and described the drink neuroses as a disease and urged its study and physical treatment was practically unknown.

Scientific studies and clinical observations brought striking confirmation of the disease theory and indicated that the phenomena of the drink and drug neuroses could not be explained from any other point of view.

Modern laboratory researches of the effects of alcohol on the cell and tissue brought out a wealth of evidence concerning the degenerations and erosive action of this drug and yet physicians showed timidity and hesitation in the presentation of such facts, because of their conflict with the theories and prejudices of the past.

Why the disease of inebriety has not received the same consideration and study as epidemics and other widespread maladies and why we should not regard it with the same scientific scrutiny as any other phenomena of disease is unexplainable.

The only possible reason is that alcohol as a beverage and as a drug is still invested with traditions, superstitions and theories, also with commercial interests that center about its manufacture and sale. These are practically prohibitive to critical inquiry and revolutionary studies.

The object of this paper is to group and compare many of the general facts that are now recognized as outlines of a new territory of medical researches and practice.

The alcoholic and the inebriate are two distinct types of neurotics. The inebriate is a psychoneurotic who drinks at intervals and has distinct free periods of total abstinence during which he appears healthy and normal and acts sanely. The return of the drink paroxysm is marked by complex manias, delirium, dementias and melancholias. The drink attack may come on after regular or irregular intervals, and resembles epilepsy in its sudden, convulsive manifestations and terminations.

The alcoholic is a continuous drinker of wine, beer, spirits and other forms of alcohol, as luxuries, beverages or medicines, in small quantities daily. He is literally a toxemic from poisons introduced into the body from without and poisons formed by chemical combination within, producing most complex disturbances and degenerations.

The early symptoms are always obscure and often limited to an exalted ego in which the person revels in the thought of his superior ability

*Read at a meeting of Alienists and Neurologists held under the auspices of the Chicago Medical Society, June 23-25, 1913.

and conviction that spirits have no injurious effect and that his will power is amply able to control its use.

After a time disturbances of nutrition and circulation appear, vitality is lowered and efficiency diminished, then comes rheumatism, neuritis, and disturbances of the heart, all of which are attributed to over-work, nerve exhaustion and other causes.

Kraepelin of Heidelberg some years ago made an exhaustive study of the effects of alcohol in small doses on healthy persons. These studies gave the first distinct data and explanation of the obscure early symptoms noted in alcoholics. He found that from one to two drams of alcohol in a healthy person lowered the sensory activity to a measurable degree and that alcohol was never a stimulant but always an anesthetic, depressant and cumulative in its action. Other studies in this country and Europe have not only confirmed this but brought out a wealth of facts opposed to all the teachings of the past.

Kraepelin also showed the effects of alcohol on sight, diminishing its capacity as well as obscuring the color sense, also on hearing, and proved that it was lessened; that taste, touch and smell were all more or less impaired. Impressions on the brain through the senses were imperfect and could not be corrolated because of the impaired and weakened functions.

Clinical observations on patients who come to hospitals and sanatoria show diminished sensory, motor and mental activity that can be measured and stated in exact terms. This condition is practically a palsy, which increases with the continuous use of spirits. The conclusion was that alcohol, even in small doses, was an anesthetic, either for a longer or shorter period. Some illustrations bring out this fact.

A noted astronomer declared that every time he took a glass of wine or beer his work for a few hours after was full of errors and had to be repeated. He had to give up banquets and dinners at which wine was served, and announced that he had found from personal experience that all use of spirits was injurious.

In one of the large observatories in this country, there is a specific rule that assistants and observers must abstain from spirits, coffee, tea and tobacco. This is a recognition of the action of alcohol and its injurious effects on all work requiring accuracy of the senses and reason.

In the musical world Sousa's band and other orchestras illustrate this same fact in their experience. No member is permitted to drink spirits or even wine or beer and is required to abstain from tobacco and be abstemious in the use of coffee and tea. The reason given is that these drugs impair hearing and the accuracy of the sense of harmony and melody, as well as lower the muscular control of the fingers and lips.

Familiar examples are becoming more and more prominent in the management of railroads, and the increasing insistency of all officials that operators in the train service be total abstainers. Thus everywhere in practical life the anesthesia of alcohol is recognized and becomes more and more apparent in the mistakes and errors that are traceable to its use. Nutrient degenerations constitute a more or less prominent system in alcoholics.

Alcohol as a dehydrator interferes with protoplasm, destroys its integrity, and deranges the circulation. Vasomotor palsies noted in the face are common. Derangements of the kidneys and digestion with diarrhea, constipation, fermentations, accumulations of gas are also common. With this there is distended stomach, weakened heart's action, high tensioned arteries, which can be noted in the early stages. All these symptoms steadily increase and are marked by low vitality, nervousness and symptoms of fatigue that are unusual. Explanations of over-work, and neurasthenia are given. Then comes bacterial invasions with local inflammations, and traumatisms which make a profound impression on the body. Recovery from wounds is slow and so-called neuralgic pains with great debility follow. At this stage drug taking is very likely to develop, both directly and indirectly from thoughtless prescriptions of the physician. In reality, it is toxemias within the body, increased by the toxic poisons from without that become active and predisposing causes of profound degenerations, both local and general.

The inebriate presents many of the same symptoms, only they are intensified and develop into a convulsive obsession for spirits, up to the point of stupor. This morbid impulse to secure narcotic effects is peculiar to alcohol and some drugs. After a time it dies away, then various local in-

flammations appear, such as gastritis, local irritations of the kidneys marked by excretions of albumin and salts, heart feebleness and muscular fatigue. These symptoms pass away, and a period of abstinence follows, in which there seems to be a full return to previous health and vigor. Then all unexpectedly some complex symptoms appear, which are followed by another drink paroxysm.

Sometimes this period is prolonged for several days and weeks in which the person drinks to stupor every day, then suddenly the end comes, and with it melancholia, remorse and profound conviction that he will never drink again. Often local inflammations begin and run a mild course. In this there is distinct physical and mental degeneration. The reason is faulty in some ways, and clear in others. Physical work is done automatically and with a returning vigor many symptoms disappear or are suppressed, so as not to attract any attention.

The drink convulsion is most complex and confusing, noted by exhaustion and mental derangement. The free interval may not exhibit any of these symptoms. The person may do good work along accustomed lines. Many persons realize during this free interval, signs of debility and exhaustion, others do not, but claim to be perfectly well, and show a paretic exaltation and confidence in their perfect health that is suspicious.

The inebriate is potentially a maniac of the epileptoid class, and the paroxysms, while due to a great variety of unknown causes are very largely influenced by toxemias and faults that are preventable. The drink paroxysms are often followed by most serious diseases of the lungs, kidneys, liver and heart. Consumption and pneumonia are more or less common in inebriates. When the drink craze subsides pneumonia develops and is literally a pneumoparesis and paralysis of the branches of the pneumogastric nerves.

Consumption and inebriety are very closely related. The subsidence of one is followed by the development of the other. In the alcoholic the continuous use of spirits favors the erosion of the lung tissue and diminishes the protective power of the phagocytes. The breaking down of the lungs in an alcoholic is always fatal. It is not so in the inebriate.

The convulsive use of spirits to the point of stupor for a time has some deterrent effect. When this stops, a fresh onset of the disease follows. There are a great many curious facts not yet studied, concerning the relation of inebriety and tuberculosis. In my book on "A Clinical Treatise on Inebrity,"* some of these facts are described.

Cirrhosis of the arteries and liver is another degeneration closely allied and associated with inebrity. During and after the paroxysm they are very prominent, but later they diminish in a large measure. There is a great wealth of facts along these lines that have not yet been studied.

The inebriate not infrequently develops paranoiac symptoms during the free interval. He displays fears and phobias; consults physicians, takes drugs and furnishes remarkable examples of recoveries supposed to be due to certain particular remedies.

It is at this time that medical men fall into many errors in both diagnosis and treatment. Not infrequently a young man will discover a new form of brain and nervous disease, and give some very exact studies, which he asserts are new to the literature. Almost every year something of this kind appears. Enthusiastic, credulous men will make confirmatory studies, but in the course of time they soon pass away.

Critical inquiry will show that many of these marvelous instances occur in inebriates, that the symptoms noted were only seen in the free interval and later the drink paroxysm and other symptoms overshadowed the first description, hence they disappeared.

Delirium tremens is not very common in inebriates, and when it occurs, it is so complicated with manias and delusions as to often be mistaken. In the alcoholic, delirium tremens is quite common. This is of a low degenerative type, with partial recoveries, but continuous degeneration.

The alcoholic may have stages of delirium, called tremens many times, and apparently recover. In the treatment most disastrous results have followed, particularly in inebriates. Here the deliriums and delusions are so prominent, that the thoughtless physician gives all his atention to producing sleep. The theory that if this can be accomplished a subsidance of the acute symptoms will follow has resulted in high mortality. Dif-

*Published by Harvey Publishing Company, Cincinnati, Ohio.

ferent forms of opium in such cases are particularly dangerous in depressing the heart below the point of recovery.

Hyoscine seems to perpetuate delirium and derangement and fix it in some unknown way. Many cases are noted where hyoscine was given, causing temporary sleep but leaving the brain clouded for months and years afterwards.

Other cases were noted where opium was given freely and recovery followed and an addiction to opium developed. Delirium tremens in both the alcoholic and the inebriate marks a stage of degeneration from which very serious troubles, both mental and physical begin. The inebriate may develop into an alcoholic and the former free intervals be obliterated, but an early dissolution and most pronounced disease is certain to follow.

The alcoholic sometimes becomes an inebriate and there is a suspicious after history of such a person that calls for the most careful study. Most complex forms of mental and nervous diseases always gather about persons of this class and the exact diagnosis is impossible, except in a very general way.

Cerebral hemorrhage is a common termination in such persons. Traumatisms both physical and psychical assume great importance and usually end fatally. A very important fact that should not be overlooked, one that has a great influence on the after life, is the early use of spirits before and during the adolescent period. Persons who begin to drink about this time are much more seriously affected than those who begin later and this fact has a very pronounced influence in the prognosis. Heredity is a general factor, present in a very large number of persons. Notwithstanding the denials, statistical studies furnish unmistakable evidence that the largest number of inebriates and alcoholics, have an ancestral history of wine and beer drinking, particularly at the table.

Some of these patients continue to use spirits in small quantities up to middle life, then break out in the most complex neuroses and psychoses terminating fatally. Others develop some form of disease earlier and become invalids or hospital patients.

Every exact clinical study brings out this fact that the use of alcohol for any purpose and for any length of time, becomes an active and contributing cause for degenerative diseases of a great variety. Of course, there are great differences in susceptibility. A sturdy German family may have beer on the table from infancy up and in early or middle life but the degenerations which follow may not be very prominent. There can be no question that vitality is diminished, mortality greater and susceptibility to disease marked. In an American family, where wine is given daily to the children, disease and mortality is very sharply defined and in early and middle life they are practically invalids of an incurable class.

The stupid error still prevails that the toxic action of alcohol is a transient condition and leaves no impression that is injurious on the organism, also that the continuous use of small quantities of spirits in no way impairs the health and normal activities of the body and mind. This is flatly contradicted by laboratory and clinical studies. Persons who have drank to great excess, meaning that they have become stupid, delirious and otherwise intoxicated, then recover and assert with great positiveness that they are perfectly well, and have in no way been injured by it, are practically hypnotizing themselves with conclusions that cannot be verified.

Physical and psychical studies reveal shadows and defects both of the mentality and senses that are not always clear to themselves. Such persons have lost the fine appreciation of their relations to others, of their own conceptions and pride of character for truthfulness and honesty. If they continue to drink at long intervals, these shadows become more prominent. There is credulity, skepticism and degrees of faulty judgment. If a brain worker, his product is inferior, if a muscle worker, he lacks much of his former efficiency.

A noted judge who at long intervals drinks at banquets to a marked degree, was found afterwards to be duller and harsher in his judgments and decisions. They were over-ruled. His former high standard of accuracy and clearness had dropped down.

A physician, who occasionally drinks to excess is becoming more and more careless of his diagnosis and treatment; he is less politic in his relations to his patients. His appearance is lacking in its former neatness and care. A business man who drinks at intervals shows faults in his judgment; he is more credulous or skeptical, less

cool and collected and complains of conditions that did not disturb him before. These are all facts which a close scrutiny will reveal.

The alcoholic particularly shows marks of decline both physical and mental. He may be able to keep up his work, but there are defects which are called weaknesses. He may have sudden phobias for wealth by any sort of method or political preferment, and want to lead in society and church, and show an ambition that is reckless of results. The inebriate may exhibit equally strange variations and paranoiac notions and changing conceptions of politics, religion, science and business. Frequently the extremists and radicals of new movements are inebriates whose attacks are concealed and not considered prominent by their friends.

In the commercial world these degenerations are recognized. Thus the mercantile agencies rate men low who drink continuously or at intervals. This is the result of experience, showing instability of character, conduct and control, and financial weakness that is growing. The bonding companies do the same thing in their refusals to take risks on inebriates or alcoholics. In all this there is an expression of experience, reduced to monetary values and without any sentiment or theory.

In institutions for the care of inebriates the same fact appears in many ways. On admission every patient presents palsies, defects and degenerations which are unexplainable except as due to the anesthesia of spirits.

The persons who are treated are of all others the most skeptical of the damage and injury which they are suffering from. They possess a delusive egoism that they are very little changed and can recover by appeals to the will. The inebriate, during the free interval, is often more clear as to his real condition but lacks control, is unstable and subject to suggestions, both physical and mental. The alcoholic is more profoundly wrecked in mind and body, but this is covered up with the same egoism and delusion.

The quack theories of producing an aversion to alcohol in a brief time and calling this a cure has done irreparable damage not only to patients but to the unthinking public. The inebriate will give up the use of alcohol on the subsidence of the paroxysm naturally, but this is not restoration. Any drugs given at this time, or any sort of treatment is often credited for results which they did not produce, but on the contrary protracted and hindered the natural progress of the case towards restoration. The alcoholic, after profound elimination through the skin and bowels, finds relief in drugs of a narcotic character, but this is limited.

Sanatorium treatment, in which every person receives the same medicine at intervals and are treated alike, is empiric and very likely to be followed by results more serious than the original disease. The present empirical treatment has done a great deal to develop an army of incurables which became criminals, paupers and dements. It has also done a great deal to educate the public as to the possibility of physical help and restoration. It has revealed the fact, so long doubted, that both the alcoholic and inebriate are curable in the best sense of that word.

Everywhere it is apparent that the number of these drink and drug neurotics is increasing. Physicians are unable to meet the demand for help, hence hospital clinics and measures and means of every kind and description are sought and patronized with the hope of securing some results that will be practical.

In my experience of over forty years, I have had the satisfaction of noting a large number of persons permanently restored from physical treatment in sanitorium, also from home and office care. No percentage of recoveries can be given with any reasonable accuracy at present, but personal studies of individuals show that restoration and recovery ought to be the rule and not the exception and farther on, when these neuroses are recognized, they will be preventable and curable the same as any other diseases.

Finally the degenerations preceding and following the alcoholic and inebriate are not incidental or accidental or matters of chance, but follow a uniform positive growth and development. They begin at a certain point and go on in a regular order of progression, which can be studied and understood. No treatment limited to a few days or weeks gives any promise of permanency. Restoration may follow from the subsidence of the peculiar prominent symptoms, but other causes are active, which must be neutralized and broken up before any results will follow.

There is a home and office treatment, which should precede sanatorium care, and not infre-

quently physicians can use means and measures here most effectively. There are possibilities of home treatment that we do not realize at present, and they are equal possibilities in sanatorium and hospital treatment of permanent restoration and cure, beyond any present conceptions. The stupid theories of vice, depravity and moral weakness as explanations of why men drink has prevented any recognition or study, until these theories were obviously absurd. The man who drinks wine at the table, or beer and spirits, or the man who drinks at intervals to intoxication are all moral defectives, or if not that, are well within the range of rational control and free will, hence have a medical significance. The prevalence of such theories has built up an enormous army of neurotics, and degenerate psychosis, who only come for help and treatment when they have reached terminal stages and are in the incurable classes.

We sit around and observe this army being recruited, developed and trained and grown to the neurotic stage where their disabilities are so evident as not to be mistaken. Then we make great efforts to use medical means, always reserving the theory that it was vice at the beginning.

A large class of inebriates and alcoholics are beyond the province of practical, remedial measures, yet notwithstanding this fact, there are degrees of curability and examples that are startling in the possibilities that they reveal.

We ought to recognize the gravity, not only of the neuroses and toxemias in the later stages, but these conditions at the beginning and the possible means of prevention and correction. No physician in general practice can fail to realize the increasing neuroses and degenerations which follow from the use of spirits and no physician can fail to understand the actual condition both physical and mental which presents itself.

How to remedy it, how to advise, prescribe and plan means of restoration and cure is largely unknown, and yet every physician can do this and can find a field for practice with results as positive as from the treatment of any other disease.

Home and office treatment of this class will be a prominent feature of the practice of the future physician. I repeat the same plea and claims which I urged long ago, that this neglected army of degenerates should be recognized, studied and treated, above all theories and sentiments, and that they can be cured and restored to an extent not at present dreamed of.

The American Civic Society in a publication on the national fly campaign says:

"Cleanliness is the only solution for the fly problem."

The society is right. Cleanliness is not merely the only solution for the fly problem, but for the whole problem of public health.

Cleanliness is the keystone in the arch of life.

An interesting experiment for the purpose of creating immunity against tuberculosis is being tried in Pittsburgh under the direction of the Tuberculosis League of that city. Dr. William Charles White, Medical Director of the League, says it will probably take ten years before definite results of the work will be appreciated. The experiment is being conducted on the theory that much, if not all, tuberculous infection begins in childhood. In view of this fact, the League is aiming to supervise the growth of every baby born for the next ten years in the South Side district of Pittsburgh. The babies and their mothers will be taken in charge at the birth of the infant, and everything possible will be done to increase the resisting power of the child to disease and to make it thereby immune to tuberculous infection. The theory is that by fortifying the body in the earliest period of a child's life, the infant will, in most cases, become immune to the disease with which heredity and environment may threaten it.

TUBERCULOSIS

Undermines the family,
Brings trouble and sorrow,
Empties the family purse,
Reduces many to poverty,
Comes to the careless,
Unfits for life's work,
Limits life to months,
Orphans many little children,
Scoffs at drugs,
Isolates from friends,
Scores 4,000 deaths each year in Chicago.

Six weeks ago the Health Department gave as full publicity as possible to the fact that it was prepared to give free vaccination against typhoid fever. The public press boosted vigorously and apparently some interest was aroused.

Result: Only two hundred people took advantage of our offer.

We are not discouraged. The public will learn in time.

This week we are sending to every hospital and similar institution in the city a circular letter urging that all nurses and attendants take the vaccination, we offering to do the work.

Later it will be interesting to record the institutions that have shown a disposition to move actively for the protection of their nurses and attendants.—From *Bulletin Chicago Dept. of Health.*

UNCLE SI'S HOME GROWN SPEEDOMETER

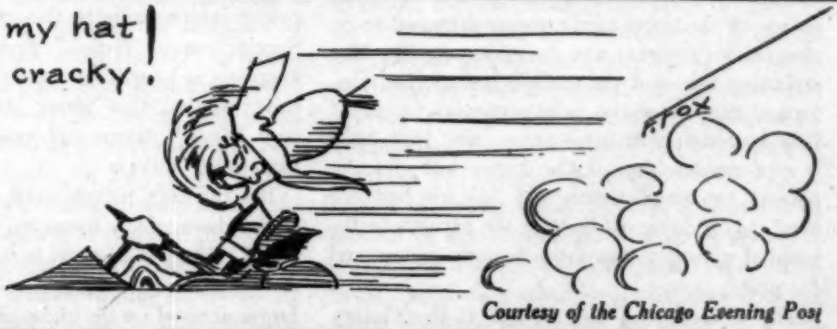
10 mile per hour,
jest a-bout."

15 mile, I reckin.

20 mile, I cackullate.

30 mile! by hek!

Ha! touchin' my hat!
40 mile by cracky!



Courtesy of the Chicago Evening Post

READ OUR AUTO ADS—THEY HAVE THE RIGHT DOPE

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OCTOBER, 1913

Editorials

THE ABUSED MEDICAL CHARITY.

It is to laugh! When rogues fall out honest men get their dues—sometimes. Without any invidious classifications or distinctions we might mention that some of the honorable commissioners of Cook county have been having a little family spat. It has long been familiar to those who know, that the County Hospital has always harbored patients in its wards—and especially in its private rooms—who were abundantly able to pay for hospital care as well as medical attention. In the language of the internes such persons have been and still are known as "Warden Specials." Warden specials are usually assigned to the small rooms off the large wards, rooms supposed to be reserved for patients who are extremely ill. The attending men and the internes are tactfully informed that So-and-so is a particular friend of Commissioner What's-his-name, who will hold it as a special favor if the doctor will give the patient his especial care and "do his best for him"; as if doing his best for the patients in the hospital were not always the doctor's custom and his pride.

The medical men and women at the County Hospital have been quite accustomed to these "Warden Specials"; they have always encountered them through all administrations, both grafter and reformer; yea, even through the present year of grace, 1913, under the present angelic reformers' administration. People come to the receiving ward of the hospital bearing cards from this and that commissioner recommending and even ordering their admission to the hospital. In passing let us remember that all any indigent person has to do to get admitted is to come to the hospital and to be suffering from some physical trouble which needs hospital care. Therefore no legitimate case ever requires a card or a recommendation from anybody. A great many people however think that, even if really ill, the word of a commissioner or other politician is a necessary prerequisite to admission. The commissioner does not tell them otherwise because his supposed ability to get people into the hospital enhances his political fortunes. Up to very lately the order of a commissioner has always had great weight in the front office even in the cases of persons who were not ill or who were able to pay.

An amusing little story is told among the attending physicians and the internes. It seems that a short time ago (during these present reform times, by the way) a man came to the examining room and was carefully gone over by the examining interne. Nothing physically abnormal was found. There came, however, strong representations from higher up that the man must be admitted and that it was up to the interne to find some diagnosis to write on the admission card as an ostensible reason for the patient's (?) admission. Now it often comes to pass that a mother is admitted for legitimate reasons and she is forced to bring her baby with her. The baby has an admission card having the diagnosis blank filled out with the word "feeder." So our bright young interne admits this particular "Warden Special" as a "feeder," probably as correct a diagnosis as he will ever make. History does not state whether this young Aesculapius has yet been hanged, drawn and quartered or has been banished to Siberia.

But the little private graft of the commissioners has been rudely disturbed within the last few weeks. There is a breach in the Honorable Board of Commissioners of Cook county. The reformer lambs arrayed on the right hand of the reformer president and the political goats on his left hand

are making faces at each other. Word went out to the hospital and to the county agent's office that the hospital was for the sick poor of the county and not for the well or for those sick able to pay. It was intimated that at least certain commissioners were not to be allowed to have "Warden Specials" in the hospital any more. Among some commissioners who had sent people to the hospital with cards demanding their admission and who had been "turned down" was a certain belligerent one who immediately went over to see about it. Finding the employe who had refused one of his clients and had thus "incurred the patron's ire," he promptly knocked him down and slapped him on the wrist. Later, in the board meeting, his righteous indignation so overcame him that, his own lurid words failing him, he threw a large collection of the words of another at a certain reform lamb. The heavy volume containing the words hit the lamb on the nose. Things were somewhat mussed up, the president of the board, the reform lambs and the *Chicago Tribune* were terribly shocked and the whole story got to the public.

The result will be that, at least for a time, the Cook County Hospital will be reserved for its legitimate beneficiaries, namely, the sick and injured poor of the county, and the members of the attending staff will not be compelled to treat free well-to-do friends of influential politicians or able-bodied "bums." It is a sad commentary upon the condition of things in the medical profession that the abuse of medical charity in the County Hospital should receive this body blow not from the organized profession itself but because of an especially nasty squabble among the county commissioners.

The Committee on Abuse of Medical Charity of the Chicago Medical Society has elaborated a plan for lessening the abuse in the hospitals of the city, including the County Hospital, by means of publication in the *Bulletin* of the names of free ward patients admitted to the various hospitals of the city. Most of the larger hospitals so far have failed to reply to requests for lists of such names. The plan has met with little support among the better advertised members of the local profession. Indeed our peerless leaders have seemed to have little love for any scheme aiming to lessen the abuse of medical charity in the large dispensaries and hospitals. It remains for the rank and file of the organized profession of the city and state to strike while the iron is hot and to create such a public opinion against all forms of abuse of the charity of the profession that a reform in that line will be forced.

HOSPITAL LEGISLATION.

The influence of the county medical societies working in connection or alliance with civic organizations and women's clubs to arouse public interest in health questions has been exemplified in the recent history of the campaign to secure laws for the establishment of hospitals by cooperation between the cities and counties of Texas. The last legislature passed such a bill requiring counties in which there are cities of 10,000 inhabitants or more to hold a hospital bond election whether so petitioned or not. In all other counties it is necessary for 10 per cent. of the voters to petition for such election. Mr. R. J. Newton, executive secretary of the Texas Anti-Tuberculosis Association has been especially active in the campaign for hospitals. His reports indicate that several counties are now actively engaged in taking the necessary steps to secure hospitals under the new law and a much larger number are becoming interested in the proposition. Mr. Newton has made free use in his literature of the excellent cuts of the Chicago Department of Health *Bulletin*.

The climate of Texas has always had a special attraction for the tubercular and so many patients from the East and North have gone to that state with limited funds that they have become a serious embarrassment to the various communities. The Texas State Medical Association adopted two resolutions on this subject. One called upon the U. S. Public Health Service to investigate the situation, and the other called upon congress to set aside abandoned military posts for the care of the indigent stranger consumptives and to maintain them at federal expense. *The Texas State Journal of Medicine*, commenting on these resolutions says: "It is extremely doubtful whether anything will come of the effort."

Now that tuberculosis is generally known to be curable in any climate there is small excuse or reason for sending the tubercular away from home, unless to a sanatorium, and that does not imply a change of climate for sanatoria are to be found in practically every state in the Union.

The new Indiana law (Act of March 10, 1913), provides that the board of county commissioners of any county shall have power to establish a county hospital for the care and treatment of persons suffering with tuberculosis. The board has the power "to borrow money for the erection of such hospital and for the purchase of a site therefor, on the credit of the county and issue county obligations therefor, in such manner as it may do for other county purposes." Provision is made for the free treatment of indigent patients of the county, and for payment from those who can pay or whose relatives can pay an amount not exceeding the average per capita cost of maintenance. Patients from counties not having a hospital can be admitted on the same terms when the capacity of the hospital is not fully taken by residents. In such case the "home" township trustees provide transportation and the maintenance fees.

TRAUMATIC HYSTERIA AND FREUD'S CONCEPTION OF HYSTERIA.

The discussion of Freud's ideas concerning the etiology of hysteria and the other psychoneuroses has been universal. There are many ardent supporters and just as many confirmed opponents.

The essence of the Freudian theory of hysteria may be briefly stated as follows: There is in hysteria a dissociation or disintegration of the personal consciousness, with the release of certain buried, hidden, repressed complexes or constellations of ideas which have been forgotten but continued to exist dynamically in the region of the unconscious, unknown to the individual. The cause of this dissociation is some (psychic) trauma or injury, of a sexual nature, which occurred originally in infancy or early childhood. Sexual, as used by the Freudian school, has a very broad meaning. It is by no means synonymous with sensuous. It includes all possible sexually pleasurable feelings or tendencies, physical or psychical, including incestuous, bisexual and polymorphous perverse sexual tendencies. The Freudians have made much of these latter sexual tendencies of the child and the psychoneurotic, especially of the hysteric. Their idea is that the polymorphous perverse sexual activities are quite decided in the infant and the child. With advance toward puberity the genital zone gradually assumes the ascendency, and is made the center of the sexual excitation and activity. However, the so-called erogenous zones (such as the rectum, bladder, mucous membrane of the mouth and tongue), which up to this time have been capable of independent excitation with the production of sexual pleasure, may still continue to be active or their activity may be resumed after a period of suppression. Definite bisexual and incestuous tendencies also exist, the Freudians believe. These activities are gradually suppressed and are replaced by fancies of this nature—psychical instead of physical. These fancies and thoughts are disagreeable to and incompatible with the better thoughts and tendencies of the individual and opposed to the social and ethical standards and inhibitions. Consequently efforts are made to repress them and hide them from the personal consciousness. They are forced into the unconsciousness and are apparently forgotten, but, unknown to the individual, continue to exist, to accumulate energy and grow dynamically until they become so powerful that they make their appearance in disguised form. Thus the thoughts appear transformed and symbolically expressed in the dreams and fancies of hysterics, in their psychic symptoms, and in their somatic symptoms, which latter, according to Freud, are nothing more than the manifestations of the sexual activity of the individual. It is unnecessary at this time to discuss the extensions of the Freudian theory. An extensive psychology has been elaborated.

The battle-cry of the Freudian school in the case of hysteria (and also other psychoneuroses and neuroses), is that it is primarily dependent upon a disturbance in the sexual life of the individual. The sexual disturbance may be of any nature but frequently or generally partakes of the nature of a sexual perversion which is really at the bottom of the condition.

The immediate experience producing the dissociation may be of any nature—but essentially and fundamentally the underlying cause is the sexual trauma of ancient origin which is the subsoil permitting the hysteria to be developed.

The question which should come to mind at once is: How will Freud explain the so-called traumatic neuroses and psychoneuroses, included amongst which is traumatic hysteria? The essential symptoms are in no way different. The etiology here seems to be definite. The individual has reacted biologically to a situation in which

self-preservation was obviously the dominant motive. The trauma here, of psychical nature, alone or combined with actual physical shock, which has produced the hysteria is mainly concerned with the self-preservation of the individual. Surely, one feels certain, sexuality plays no rôle here. How, we may ask, will Freudians explain this? We have not yet seen this question asked of or answered by the Freudians. Will the Freudians insist that in these cases also the sexuality is the real cause, and the accident was only an immediate, secondary, contributing but minor factor? We should like to hear from the Freudians on this matter. What have they to offer?

THE MAYO CLINICS.

Below is a fac-simile of a postal card received by Chicago doctors.

THE MAYO CLINICS

The Mayo Clinics at Rochester begin promptly at 8.00 a. m. The Great Western Limited leaving Chicago daily at 6.30 p. m. with sleeper for Rochester is the only train which enables you to be present at the commencement of the work.

Best route for your patients, too.

For tickets and berths call on or phone H. C. Hilbourne, General Agent Passenger Department, Chicago Great Western R. R., 63 West Adams Street, Chicago. Phone Central 3989. Train leaves from Grand Central Station, Fifth Avenue and Harrison Street.

Will the Minnesota State Medical Association stand for this, or will the same brand of whitewash be applied as was used in the case of skillfully devised articles in certain lay magazines?

Correspondence

A NEW RHEUMATISM SPECIFIC.

The following letter was written by a young layman who, we presume, saw visions—of dollars. The letter was mailed to physicians and was printed with comments, in the Journal A. M. A., August 30. The reply by a physician is, we think, too good not to be published.

July 31, 1913.

Dear Doctor: I have in my possession a physician's prescription for rheumatism, which has eliminated the pain every time I have used it. I am subject to acute attacks about once or twice a year, and, as above stated, this remedy surely does the work. I fully believe that, should you prescribe it for any of your patients, good results would be obtained. My own family physician prescribes this remedy with success, and thereby endorses it.

If you will send me one dollar in enclosed envelope, I will take pleasure in mailing you a copy of this prescription, which you should have without fail.

Rubenville, Ind., Josh Center Township,
August 1, 1913.

Dear Sir: I am in receipt of your very cordial invitation to invest some money with you. Enclosed please find $1.00—I'll be d——md if I can. You certainly are a lemon and your family physician, who you state endorses your prescription, must be a peach. Wallingford has nothing on you, and Old Doc Yak is the veriest amateur in your class.

If you are the living testimonial of your prescription it must not only contain excellent remedies for rheumatism, as you state, but must be a powerful stimulant to the gall and nerves as well.

When Caesar wrote that "All Gaul was quartered into three halves" he evidently had never heard of you.

Physicians may bite on oil stock and subscribe for "Edition De Luxe" volumes of the "World's Best" but they won't bite, Lemmy, on the bait you use.

Just a suggestion ere we part, for you are so deliciously fresh that one cannot begrudge the two-cent stamp that is expended upon you: stick to the coal business, for when you attempt to roam so far afield you are lost. If your coal is as full of clinkers as is your scheme for separating country doctors from the "long green" it will require careful washing—hand washed at that.

Cordially yours,
N. O. Sucker, M. D.

Special Article

MODERN REFRIGERATION

In view of the increasing difficulty of securing sanitary water supplies and the doubly serious problem of sanitary ice, the appearance on the American market of a little refrigerating machine, suitable for the family refrigerator, is of the greatest importance. This machine is of French origin, and has been in operation in that country for something like seven years. It is arranged so that it can be applied to any re-

frigerator (and in the larger sizes to a series of refrigerators), and produces temperatures lower than can be secured with ice, giving a dry cold and the better sanitary conditions that go therewith. At the same time the machine makes such actual ice as is required for table use or for drinks, and holds ready for instant use enough ice to take care of special requirements, such as making ice cream, etc.

The price of these machines at the present time puts them beyond the reach of a great many people. The field for them is nevertheless a very large one, and as the public becomes better informed regarding the importance and also the possibility of more sanitary storage of food supplies in the home, this field will increase very greatly. Up to the present time there has been no great commercial incentive to spreading information regarding the value of lower temperatures and dryer atmosphere in preserving foods in the home, and so long as there was no satisfactory method of securing these conditions it would have been idle for scientific investigators to spend time popularizing information regarding unattainable conditions.

The difficulties which have up to the present time stood in the way of sanitary household refrigeration have been the complication involved in all the refrigerating machines available, and the danger involved in this complication. Most of these machines have used either ammonia or carbonic acid, both of which are subject to considerable danger of explosion from improper handling of the machine. It is a well-known fact that any serious exposure to ammonia fumes is very apt to be followed by an attack of pneumonia. The cost of operation of these machines has also been a serious handicap.

The appearance on the American market of the French machine above referred to; namely, the Audiffren-Singrun refrigerating machine, marks an advance in the art of refrigerating along very original lines.

It is the invention of the Abbe Marcel Audiffren, a professor of physics at the former Catholic college at Epinal, France. The machine is so simple that as it is arranged for use in this country it is started or stopped by a single motion. There are but two bearings to be oiled. The machine makes less noise than does the motor which drives it. There is no possibility of any explosion due to the action of the machine. As the manufacturers put it: "If the operator turns on the water and power, the machine turns on the cold."

In appearance the Audiffren-Singrun refrigerating machine is practically a large dumbbell with a pulley on the end. It consists of a shaft having a hollow drum on one end, another drum at the middle, and a pulley at the other end. The machine is carried in two bearings, the shaft being placed horizontally and the bearings being located one on each side of the drum at the middle of the shaft. When the machine is revolving in these bearings the end drum becomes cool and the drum at the middle becomes warm. Water is kept supplied to the middle drum to keep it from becoming too warm, and the cooling effect of the end drum is used to cool brine (common salt and water), which brine is then circulated through cooling coils which may be placed wherever it is convenient.

The machine operates by causing a liquid to evaporate in the drum at the end of the shaft, drawing the gas resulting from this evaporation into the middle drum through a passage in the shaft. In this middle drum the gas is compressed and returned to the liquid state after giving out its heat, and is then allowed to pass back to the end drum through a second passage in the shaft to be re-evaporated and repeat its cycle of operation.

The working parts of the machine are hermetically sealed within the drums and are lubricated by a bath of oil, which together with the refrigerant is charged into the machine in the factory and remains permanently.

This feature of hermetically sealing and the permanence of both the lubricant and the refrigerant is the most striking thing about this machine. There is no breaking down of the refrigerant and none can escape, so that this part of the apparatus is permanent. The oil is protected from oxidation and also from dirt, thus avoiding the two sources of deterioration of oil. Upon this fact, and upon the skillful design of the parts so that they are constantly subject to the most thorough lubrication, the life and success of the machine depend.

Those who are familiar with the laws of thermodynamics will realize at a glance that the machine automatically operates under the very best

possible conditions as regards economy, whereas, in the old type of machine economy cannot be secured except by the most constant and skillful attention.

Refrigeration secured by these machines is applied to practical service by pumping the brine which has been cooled up to and through the cooling surface which may be placed in the refrigerators to be cooled. Various designs of cooling surface have been developed for use with the machine a number of which have been developed in this country in adapting the machine to the different conditions existing here. The machine is also arranged so that it starts and stops automatically under the control of the temperatures in the refrigerator being cooled. In this way no power is wasted. When the requirement for refrigeration ceases the consumption of power and water is automatically cut off.

The ice which is made by these machines is made from the same supply from which the drinkink water is drawn. As a result the ice may be placed directly in the water without any possibility of contamination and without the flat taste that distilled water ice has. This ice is invariably opaque, due to the salts and the air which all natural waters carry in solution. For almost all service, however, this opaqueness is of no importance, and when the reason for it is understood there is little objection to it.

There are in the neighborhod of a thousand of these machines in service in France and her colonies, and the American builders of the machine have now several hundred in service in this country.

Notice

Dr. A. M. Harvey, chairman of the Committee of Public Policy of the Illinois State Medical Society, requests, through Dr. W. H. Gilmore, that all county societies arrange special meetings during this Fall and Winter for the consideration and discussion of the subject "Social and Sex Hygiene." He suggests that joint meetings be held with other organizations, such as women's clubs, men's clubs, and teacher's federations. Such meetings, held under the auspices of the county societies, thoroughly advertised and the general public invited, have proven both interesting and instructive to the communities in which they have been held.

Dr. A. C. Cotton Banqueted

On Sept. 25 more than 250 of Dr. Cotton's friends and admirers gathered at the Hotel Sherman, in Chicago, to celebrate by a dinner in his honor, his 66th birthday and his return from the "International Medical Congress" to which he was a delegate. This was one of the rare and notable events in the history of fraternal honors paid to members of professions by their fellows. Professional ability, intellectual powers, devotion, loyalty and integrity, combined with an attractive personality, are sufficiently rare to be appreciated.

Love and admiration of Dr. Cotton made the spirit of the occasion, and sustained a generous manifestation of fellowship and good cheer throughout the program. Delightfully appropriate vocal music was rendered by the Chicago Medical Society Glee Club, composed of Doctors Kleutgen, Lennon, Hardie, Corwin, O'Byrne, O'Neill, Byrne, Stubbs and Betz.

Dr. C. P. Caldwell, president of the Chicago Medical Society, as toastmaster, introducing the program, said:

"It must be a great pleasure to you, as it is to me, to meet here tonight, to do special honor to my old friend and classmate, Dr. A. C. Cotton. I appreciate this opportunity, as president of the Chicago Medical Society, to acknowledge the immense debt of gratitude we owe to the guest of the evening. A soldier whose life-work has been to wage war on disease and death—a sturdy old medical viking, who has practiced modern medicine, who has stood up for sacred truths, for rights, for principles, full of courage and enthusiasm, he has proved his willingness at all times to make material sacrifices for the sake of his colleagues, never thinking of self, but of others. How we love him as a friend and counselor. As my friend Corwin has put it—this is a fine exhibition of fraternal fabrics, the warp and woof of which is Cotton—all Cotton and a yard wide. May Dr. Cotton live long in his brilliant manhood, and we will ever gather around him in wondering admiration."

Introducing Dr. Patton, Dr. Caldwell continued:

"It would take many evenings and many tongues to recount the activities of Dr. Cotton. I can only hope to bring out, through the gentlemen present, some of whom I will call upon, a few of his magnificent achievements."

Dr. Patton: "Mr. Toastmaster, Dr. Cotton, and Dr. Cotton's friends—if it is expected that my remarks be introductory of the guest of the evening, I must disclaim any such intention. Dr. Cotton needs no introduction. His friendships extend from the Atlantic to the Pacific, and his reputation has not even these limitations. To paraphrase Emerson, 'We know that his heart is as big as the world, and has no room in it for the memory of a wrong!' We are here to extend a welcome on his safe return from abroad, and to celebrate his birthday—a milestone in a life of usefulness to the patients he has served, of buoyant friendships to those who have been privileged to enjoy them, and of uplifting influence to the profession he has advanced. Dr. Cotton,

> "'God grant you many happy years,
> Till, when the last has crowned you,
> The dawn of endless days appear,
> And Heaven is shining round you!'"

Toastmaster: "The ancient Greeks had their Apollo, who was the patron of poetry and medicine. We, too, have our Apollo, who is handsome, a good doctor, and a leader of the muses."

Dr. Corwin presented oratorically the following:

ALFRED C. COTTON, A.M., M.D.,
Pediatrician and Man Four-Square.

By Arthur M. Corwin, A.M., M.D.*
CHICAGO.

Good Sir, and Master of this gracious hour,
And all ye goodly sirs, both lean and fat,
Who count a friend of greater worth
Than name of oligarch or democrat,
And who delight to show esteem to this,
The nestor of them all in matters infantile;
Give heed, I pray, to these, my verses blank,
For ordinary prose may not express the thought
And rhymes with cautious, halting feet
Are all too slow.

'Tis given to womankind
To draw mere man with silken thread of charm
Of mind and heart and fascinating form and face,
And bind him with a golden grace of manner sweet,
With thrilling touch of lip and soft embrace;
Her voice like call of mermaid
From an emerald beckoning wave
Enceptivates him in its liquid depths,
And if he struggle from its thrall,
'Tis vain, her soulful eye has shot its conquering shaft;
His virile strength is all her own;
In servitude he bows, her willing slave.

And yet not all her slave,
For as to Jonathan a David clave,
And Damon to his Pythias,
The brotherhood 'twixt stalwart men
Was born of old, Divinely chemical,—
Fraternal atoms they
Of that primeval plastic clay
From which they sprang,
In sworn allegiance through a common origin;
'Tis thus these atoms men cohere
To make fair friendship's molecule
A most coherent stuff.

But as the potter molds from out the mass
Some fairer shape
In skillful likeness of a thing divine,
So differ men, and differ too
In quality of their ancestral mud;
Thereby we humans masculine
In recognition of a bit of finer stuff,
Though one of us,
Rejoice to bring spontaneous offering
Of soul and brawn to Cotton,
Long our friend, our councilor,
And yet our critic just.

'Tis our's to laud the *virtues* rare of this our friend,
His *faults* forget—
What artist would with sooty brush
Bedaub the beauties of a sunset sky?
Nor measure we with fulsome flattery
His merits fine;
No honor that to him or us
And naught to satisfy.
'Tis mete the rather with an eagle's quill,
Symbolic of the strength of love we feel,
To write indelibly and plain
The happy truths we know of him.

What though of human foibles
He may have his share;
If they who do no sin shall claim
Alone the right to cast a stone at him,
No shower of rock shall fall his way,
As none of yore.
Of faults he has a few,
Some grave, perhaps, why not?
So have we all.
We love him for abundant grain of character,
A priceless store,
And reckon not of chaff.

A born physician, he,
For whom, though men and women look
To cure their ills,
Especially do infants weep
In time of pain and fear.
The voices of ten thousand of these little ones,
He's seen and saved,
I seem to hear in mighty chorus to his praise,
From out the tangle of the sleepless nights
And weary days he's served—
The children love him so.
As follow fast his trail their flying feet,
Where'er the trumpet of his auto loud they hear,
So followed children long ago that other piper dear.

The corridors of suffering
Long years he's paced,
To bless with reassuring smile and healing touch;
For decades faced the students' serried ranks
Dispensing truth;
And long by pen and voice
Made records sure.

Wide in his knowledge of the crowd,
Of books as well;

Big in experience, manifold;
Broad in his sympathy for every living thing;
Keen for the right when hostile wrong obtrudes;
A fearless, able advocate where principle's at stake;
His word is sacred more than any bond.
Wise in advice, in judgment just;
Quick to detect a sophistry;
When called extempore to reason on his feet,
What scion of the law could hope to meet
On equal field the thrust and parry
Of his subtle wit?
Generous to foe, in sacrifice for friend in need,
He'll launch his craft on any sea,
And plunge through any storm
Nor care what dangers threaten him.

In fine, with sunny heart and face benign,
A wondrous fund of illustrative anecdote at ready call,
And bubbling, kindly humor, rich with all,
He stands unshaken in his faith in God and man,
Three score and six, an optimist,
A loving, loyal, forceful gentleman.

*Recited at a dinner given in Dr. Cotton's honor by 250 of his confreres in the Chicago Medical Society at the Hotel Sherman, Sept. 25, 1913.

Dr. Noble: "When considering the career of any man who has excelled his fellows, one's mind naturally turns first to his ancestry, confident that from that source will come important information.

"Some time ago it was my privilege to peruse a mass of old letters and public documents which had been left by the early Puritans who established the Massachusetts Bay Colony. Among these was a letter written to the Governor of the Colony by the Reverend John Cotton. Soon after I interviewed his namesake here and casually asked him if he had any ancestors connected with the founding of that Colony. He promptly replied that six generations removed from his life, in 1633, one of his forebears, the Reverend John Cotton, was active in its affairs. While it is almost a betrayal of confidence to read you this letter, yet I am going to do so, as I am sure it will furnish reasons for the many qualities which have characterized in so not-

able a degree our own Dr. Cotton. To fully appreciate it, you must remember that at this time one, Reverend Roger Williams, had dissented from the views held by his colleagues in Boston and had been so severely persecuted at home that he had gathered about him his followers, and proceeded to Rhode Island, where he established a colony of his own. The following is John Cotton's letter:

'To the Honorable Governor of Massachusetts Bay Colony:

Whereas, It is known that one seditious person, yclept Roger Williams, a bold and dangerous man, having joined to himself other heretical and seditious characters, and departed from these shores, embued with mischievous purposes against the good of mankind and of the Massachusetts Bay Colony;

Therefore: Be it recommended to the Honorable Governor that a band of resolute and zealous men be at once assembled and placed aboard the good sloop, Polly Ann, now lying empty in Plymouth Bay, and immediate pursuit be made of this blasphemous, seditious and ungodly crew, to the end that they be one and all seized and conveyed in irons to the Barbadoes Islands where they shall be sold to the Islanders as slaves for their price in rum and molasses, whereby great gain shall accrue to the Massachusetts Bay Colony and great glory to God Almighty which is high in the heavens.'

"Now, to account for the many qualities of our Dr. Cotton, springing from an ancestor who could write such a cheerful letter as this, I am satisfied one must disregard the laws of heredity and freely adopt the law of opposites.

"Born in 1847 at a little village of New England settlers in Pike county, Illinois, Dr. Cotton's career, up to the age of thirteen, so far as we have knowledge, was that of a normal boy in a small country town. If he gleaned fruit from neighbors' orchards, or melons from their gardens, it is not of record, but at this age, which brings him to 1860, the beginning of the Civil War, we hear him enthusiastically learning to play the drum. Things were stirring about that time; martial spirit and military activities dominated every village and hamlet in the country. Three years passed and President Lincoln issued his last call for troops. At Quincy, Illinois, the regiment of the 137th Volunteer Infantry was being organized, and this young lad, then 16 years of age, on the 1st of May, 1864, enlisted as a drummer boy. He served in this capacity only a short time, for when the 137th Illinois went into service, defending the city of Memphis, while the seasoned troops were withdrawn to pursue Forest, the Confederate Cavalry leader, the sixteen-year-old drummer boy was in the ranks carrying a musket. It is a matter of history how Forest led the Union troops in a circle, doubled on his course and returned to Memphis and attacked the city for the purpose of releasing Confederate prisoners and looting the banks. A portion of the 137th Illinois, and of other raw regiments, was captured and sent south to Confederate prisons, where Cotton was detained for nine months until discharged at the close of the war, wounded and ill.

"As soon as his health permitted, he proceeded to complete his education, graduating in 1869 from the Illinois Normal University after teaching as principal and superintendent of public schools in his native state, he matriculated at Rush Medical College, obtaining his degree in 1878. You are all more or less familiar with his career from this time on, as general practitioner, as specialist in diseases of children, and teacher in Rush Medical College—for more than a third of a century, as one who had the confidence and esteem of his associates and the admiration of the students.

"Dr. Cotton: On behalf of your friends here assembled, as a slight expression of the ever-increasing high esteem in which you are held by them, I present to you this watch. In doing so you are not to infer that they are in any sense 'calling time on you,' but reliable information coming to the committee having this matter in charge, that the time-piece which you have carried for thirty-five years is beginning to show the effects of age and wear, they were fearful that when we celebrate your 86th anniversary, twenty years hence it might fail you so we present you tonight with this watch, with confidence that in twenty years from now you will be on time with us again. It is to be worn, I believe, somewhere near your heart."

To Dr. Noble's presentation Dr. Cotton briefly but feelingly responded.

Dr. O'Neill: "Why do we honor Dr. Cotton this evening? Not because he is advancing in years—not because his hair is white—not because he has been many years associated with us—else he would not be distinguished. It is because he is big physically, mentally, and morally. Out of the million of mankind, there occasionally occurs a great man, and tonight that man is Cotton. In the biography of Dr. Cotton, given by Dr. Noble, you must have noticed the steps in the development. First, drummer boy at 16—drummer boy to soldier and paid the soldier's penalty—soldier to scholar—scholar to teacher—teacher to doctor—doctor to teacher of doctors—teacher of doctors to leader of doctors. What an upward growth, flowering into fullness and greatness, looking over the cold and barren peaks of human struggles and misery, seeing the only remedy—moral force—this Juvenal takes Hannibal in the palm of his hand. Carlyle says, 'No age is lost if a great man can be found.' The decadence and crumbling of empires follow upon the loss of their great men. Then the age becomes dark.

"Dr. Cotton came with a great constellation. We intuitively recognize a great man—that strong personality, we awaken and look at that inscrutable and indefinable something we call personality—that constellation of men moves on, a constellation which made Chicago one of the brightest spots in the world of medicine and surgery. The profession—yes, humanity is safe while Cotton is with us, and may it be very many years—such men never die, and the mind and spirit of Cotton will emit a light which will never fail—nay, not even when the prophecy of Isaiah shall have come to pass 'And the Earth and Heavens shall have passed away.'

Dr. Whalen, President of Illinois Medical Society: "It affords me great pleasure to be here and add my mite to this testimonial to Dr. Cotton. It has been my pleasure to know Dr. Cotton since my student days in Rush Medical College, and the friendship formed at that time has only been amplified in the course of added years.

"Those of you who were fortunate enough to have been students under him will recall that he was considered then not only as a wise dispenser of medicine, but that he was known far and wide, as he is now, as a dispenser of much valuable but often blunt philosophy. By way of illustration I am going to relate an incident with Dr. Cotton's permission. One afternoon while I was in his office, a young man of his acquaintance entered and the following dialogue took place: 'I have not come for pills this time, doctor, but for advice. Doctor, I am young and I want you to tell me how to get rich.' The genial Cotton replied: 'Yes, I can tell you. You are young and can accomplish your object if you will. Your plan is this: First, be industrious and economical; save as much as possible and spend as little. Pile up the dollars and put them at interest to work for you. If you follow out these instruction by the time you reach my age, you'll be as rich as Croesus and as mean as hell.'

"Dr. Cotton needs no banquet nor speech to demonstrate the place he fills. The real sentiment is written in your beaming faces. The representation of the great professional and scientific bodies that are here tonight, speaks loudly in his honor. Words of praise are sometimes questioned, but the spontaneous outflow of hearts of love never can be questioned.

"Dr. Cotton made Chicago his home some forty years ago. He came to this city unsupported and unhandicapped by ancestral pedigree; he came without influence, except the inherent gifts of a great soul and a great intellect. By the sheer force of such power he forged to the front and has carried the banner of success and planted it on the citadel of every undertaking; his private and public life shows that he is deep, discerning and analytical; that he possesses a mind that is broad and liberal and a judgment that is true. He has filled many positions, accumulated friends that are legion, yet amidst all the multiplicity of his professional and official life, his integrity and character remain unimpeached.

"I have known Dr. Cotton long and intimately and I have seen him tested under many trying conditions. In the transitional stage, in the conversion of the rule of the Chicago Medical Society from an oligarchy to a democracy the position of Dr. Cotton was epochal. In that struggle conditions demanded as a leader no summer soldier or sunshine patriot. Times like these called for no political dilettante, who comes into camp when honors are most ripe to pluck. They called for no half-fledged chanticleer who was only just beginning to acquire a democratic crow. The time needed a general who had suffered the hardships of the camp, the toils of the march, the dangers of the field; one who had stood at the bloody angles and who had proved his mettle in the baptism of fire. Dr. Cotton met all these requirements.

"He does not cling to a thing simply because it is hoary with age. Neither will he embrace it because it is new. He is conservative enough to believe that nothing should be destroyed merely because it has lasted a long time. He is progressive enough not to reject an idea simply because it is not covered with the mildew of antiquity.

"These lines from Wayland Hoyt illustrate the character of Dr. Cotton; they also contain a sentiment which his life beautifully exemplifies:

"'What are we here for, you and I,
As the long and wonderful days go by;
Each one stretching to us a hand
Filled with privilege high and grand?
Born of a meaning our lives must be,
God has a purpose in you and me.

"'We are here, you and I, to pass along
Blossoms of kindness and gladness and song;
To give of our joy a sacred cup
That the hearts around us may be brimmed up;
And to hold to the struggling, where'er we stand,
The comfort and strength of a helping hand.'"

Dr. T. W. Brophy: "I accepted the invitation to be present tonight with the keenest delight. It was my good fortune to be one of Dr. Cotton's classmates at Rush Medical College. Dr. Cotton was even then a leader of men, brilliant in his classes, lovable in his personality, noble in his character. Dr. Cotton was the valedictorian of his class. I remember one episode during his student days, when he was delegated to present Professor Walter S. Haines with a microscope—a testimonial from the class—it was a monocular, all that the class could afford. In presenting the microscope he said: 'We did not give you a binocular, hoping that you would close one eye to our many faults and with the other magnify our few virtues.'

"Dr. Cotton held the chair of Diseases of Children for many years in Rush Medical College. Foremost as a teacher of the subject in the United States, he was the ideal doctor of the hundreds of students who passed through the institution and who profited by his example. It is a pleasure to me, as I look around this hall and see so many graduates of Rush, graduates of every class for the past 38 years, also representatives of every college and society of medicine in the state, representatives of the army and marine medical corps and other organizations, to note that upon the foundation of friendships laid by Dr. Cotton 40 years ago, has been reared a magnificent temple of love and admiration. I feel that Dr. Cotton's best work is still before him, and that now he is approaching the zenith of his powers. Magnificent as has been his work, I feel that in future he will excel any of the past."

Dr. John A. Robison: "I must say I would have been greatly disappointed if I had not had an opportunity to voice my deep affection for our silver-haired, smiling-faced friend. Dr. Cotton has been associated with me for many years in college, hospital and professional work. He is the Mount Blanc of the medical profession of Illinois, snow-capped summer and winter, his peaks catch the morning and evening rays, reflecting light into the dark places. His sturdy form has been active in good deeds for mankind, laymen, and professional friends. I believe, Dr. Cotton, you will cherish the memories of this night as one of the choice occasions of your life, for these genuine expressions of love are more precious to receive than gold and gems. We hope that you will continue to be linked to us, your friends, for many years to come with these chains of fraternity."

Dr. J. Chase Stubbs: "There are two words in the English language which stand forth prominently and boldly—one is brother and the other is friend. Brotherhood is an accident of birth—one has no choice in the selection of his brother or brothers. Friendship occurs by attraction. It grows as the flower, conceived in the bud, ripens, expands, and unfolds its beauty to the sunlight, giving us the full blown flower. Friendship, unlike the flower, never dies. Friendship is always green, it is never young, neither is it ever old. It is not measured by time. Tonight we are all gathered together to tell our esteemed friend that we know him and that we prize his friendship. In place of waiting until our friends are laid away to rest, to shed the silent tear and drop a flower of tribute, we all gather together to give a joyous home-coming and to tell our honored guest that we honor, cherish, and love him while he is still in the full vigor of life."

Dr. Van Derslice: "We are here to do honor to the man who has been my teacher, superior, friend and brother for the past twenty years. No one can know the extreme gratification with which I view this body of representative medical men assembled here to do honor to him who has had more to do than any other man in the shaping of my medical career.

"Were I to eulogize him my thought would not run in the same channel as those who have preceded me this evening. We all recognize the army of friends that he has all over this country. It has seemed that to know him was to love him, but do we love him most for the friends or for the enemies he has made?

"As I look over this friendship of twenty years, one trait of his character stands out above all the rest: that is his loyalty to his friends. Cotton has suffered more, endured more for his friends than human mind can estimate. This high cost of loyalty must in a way be repaid by the reward of his knowing that we, his friends, know the fearful cost and recognize that sterling integrity in him that has endeared him to us and entrenched him in our hearts."

For want of space only a brief synopsis of the many speeches of praise and congratulation may be given:

Col. James J. Healy, a civil war veteran and late of the 2nd Regt. I. N. G. after speaking feelingly of his

thirty years' intimate association with Dr. Cotton in the Veteran Union League, the G. A. R. and in the I. N. G., said, "Whether in camp as surgeon of the artillery battalion, in post as commander or in the Veteran Union League as a comrade, Captain Cotton was always consistent as an advocate of fair play. Always courageous in opposing cliques and ring rule, always popular on account of his character and personality."

Prof. D. W. Graham, ex-president of the Chicago and State Medical Societies, who served in the Civil War, a former teacher of Dr. Cotton's and later a colleague in hospital and college, said in part: "Our guest of the evening has been for many years my near neighbor, and I have always been proud to call him friend. Differing at times on matters of public or professional policy I have found him always honorable, fearless and straightforward with a personality that won him friends even among his political opponents.

"The merited encomiums heaped upon Dr. Cotton tonight by his fellows of the profession might well cause a less worthy heart to quail in fear of failure to make good in the future."

Dr. J. W. Pettit, former president State Medical Society, after expressing his great pleasure at being present at this magnificent ovation related a number of laughable experiences with Dr. Cotton forty-four years ago when the latter was principal of schools in southern Illinois, later renewing his acquaintance as his teacher in Rush Medical College. He eulogized Dr. Cotton's high character as instructor, author, friend and opponent.

Dr. C. S. Bacon, former president Chicago Medical Society, after congratulating Dr. Cotton upon this magnificent demonstration of friendship and appreciation entered at length upon an analytical exegesis regarding our guest's popularity and stated that ability, honesty, loyalty and character might in this instance be summed up in the one word personality.

Dr. Jacob Frank, retiring president Chicago Medical Society, reviewed at some length the different stages of Dr. Cotton's record as from the films of a cinematograph and from past performance and achievements predicted that the future held for him still more distinguished honors.

Dr. P. J. H. Farrell, late secretary Chicago Medical Society, and late captain in U. S. Army, congratulated Dr. Cotton upon the high esteem in which he was held by his old veteran friends and spoke feelingly of personal encouragement from our guest at a time when he was new to the profession in Chicago.

"This gathering is the most remarkable tribute to a man's character and ability that I have ever witnessed."

Dr. John Dill Robertson, president medical department Loyola University, spoke of his only too short acquaintance with Dr. Cotton. Congratulated him upon the well merited esteem of his fellows because of his achievements quoting:

"Somebody said it couldn't be done,
But he with a chuckle replied
That maybe it couldn't, but he would be one
Who wouldn't say so till he'd tried.
So he buckled right in with the trace of a grin
On his face. If he worried he hid it.
He started to sing as he tackled the thing
That couldn't be done, and he did it.

"Somebody scoffed—Oh you'll never do that
At least no one ever has done it.
But he took off his coat and he took off his hat,
And the first thing he knew he'd begun it.
With the lift of his chin and a bit of a grin,
Without any doubt or quiddit, he started to sing,
As he talked of the thing
That couldn't be done—and he did it."

Since the impromptu ovation scores of messages by wire, letter and telephone have been received regretting that the senders were not informed in time to participate in the home coming welcome to Dr. Cotton.

The brief time allowed for preparation and the fact that so large an ovation was not contemplated must be responsible for this lack of general notice.

SAYINGS OF THE FOUR WISE MEN

The first duty of a statesman is to preserve the public health.—Gladstone.

The care of the public health has become the first duty of the state.—Mayo.

Our national health is physically our greatest national asset.—Roosevelt.

But I believe that the conservation of men and women is of paramount importance in this world. —Bryan.—*From Bulletin Kansas State Board of Health.*

HEALTHGRAM

Outdoor air is the best.
Try this prescription.

Any old physician—
I'll bet two bones—
Recommends it:

Golfers know it:
℞ Seasonable clothes, q. s.,
(A sufficient outfit.)
Mislay your cares:
Sally forth:

March till in a healthy glow.
Don't fail to repeat p. r. n.

After the Bulletin (A Long Way).

To measure the health security of a neighborhood, take a look at its back yards and its alleys. Shun a dirty neighborhood.

Eat, drink and be merry, for to-morrow we diet.

A funny old bird is the pelican.
His bill can hold more than his belican.
He can tote in his beak
Enough food for a week,
But we don't understand how the helican.

—Eatgrams from the *Chicago Daily Press.*

POOR GAS IS PASSING AWAY

(From the Automobile.)

SETTLING THE GASOLINE QUESTION

Auto Sparks and Kicks

Under this heading the doctor with a motor car will be kept posted on all the latest devices of merit for the pleasure and comfort of motoring on the one hand or for improving the operation of the mechanism on the other. It is impossible to make this exhaustive in any one issue, but in the course of a year this department will be made as complete as possible. We will appreciate tips from readers as to lines of accessories in which they are interested.

THE GLARING HEADLIGHT.

With the vast number of cars on the streets, most of them equipped with powerful electric lights, driving is becoming a dangerous occupation because of the blinding effect on those driving in opposite directions.

A stream of half a dozen cars, each with penetrating electric rays shooting ahead, makes it impossible for the approaching driver to see ahead at all, even if he has strong lights of his own.

It is true many of the lights are out of focus or have been improperly pitched—and this will continue unless something more than common sense is used to right matters.

As a matter of fact, headlights are not necessary on most boulevards and many prominent streets; they are a decided necessity in some parts of the city and in suburbs.

But there is no necessity for making any radical changes in the lights as now made—they may be properly pitched and properly focused and eliminate much of the objections; and still better, they may be fitted with a dimmer.—*Root's Motor Digest.*

CUTTING DOWN THE COST OF MOTORING.

The recent performance of a New York man in driving a well known air-cooled car a distance of 83.5 miles on 1 gallon of gasoline is worth more than passing mention, even though it may have been more or less of a publicity stunt. It is true, also, that the car was especially prepared for the test by the addition of a number of ball bearings to lessen friction, and also by the removal of all superfluous parts so as to bring the weight of the car down as low as possible. That such a thing can be done at all calls attention to the fact that every motorist can economize on his fuel to the extent of saving about a third if he will simply give close attention to this matter until it has become second nature to him. Fuel can be saved by coasting down hills; it can be saved by making very steep hills on the second gear and running the engine more slowly; it can be saved by slowing the car to take turns instead of running up to them fast and then using the brake, and in a dozen other ways which will occur to any experienced driver.

Perhaps the real merit of the performance mentioned will be more apparent if some additional figures are given. The car was a four-cylinder air-cooled one and as stripped weighed 1,995 pounds so that the ton-mileage a gallon works out at 83.28. When it is considered that the average car owner seldom gets above one-fourth of this fuel consumption (20.9 or in round figures 21 miles a gallon), and not one in a hundred does better than a ton-mileage of 25, a good idea is obtained of what the test showed was possible. Twenty-five ton-miles a gallon works out to 20 miles of traveling for a car weighing 2,500 pounds, 16.6 miles for a 3,000-pound car and 14.3 for a car which scales 3,500. From this it may be seen that the performance cited is about four times as good as the average owner is able to do. With the present price of fuel it should be borne in mind that even a very small saving like 10 per cent is well worth quite a little time and effort to say nothing of an enormous one amounting to perhaps 400 to 500 per cent as has just been pointed out.—*Motor Life.*

Society Proceedings

ALEXANDER COUNTY

Regular Meeting, June 19, 1913.

At the meeting of June 19, 1913, the following paper was read:

DOES NOT SCIENTIFIC MEDICINE CALL FOR CHANGE OF SPECIALISM?

A. A. Bondurant.

CAIRO, ILL.

By "Medicine" I mean the science of healing, or relieving the abnormal condition of fellow beings, whether by the so-called general practitioner or specialist. Since the days when the barbers were surgeons the specialists have multiplied by division and subdivision, until most every important part of our anatomy has its medical friend, who lauds its importance, and by actions if not words, minimizes the remaining anatomical parts without which his idol could not have existed. I could not, nor would I detract from the grand achievements of specialists from the beginning to this moment. Mankind has ever honored the practice or art, now science of medicine. For the old stock is going to be disposed of, slowly at first, but rapidly within the near future, when an invoice of specialists will not reveal their identity by the size of hand-bag, tone of voice, or blood in eye, but by the essence of concentrated thought, gleaned from analytical study of man, normal and abnormal, and the cause of the latter which necessarily implies, as far as possible, the removal of the cause.

The new era of specialism will not be recognized as now by an anatomical line of demarcation distinctly drawn; as eye, ear, nose, chest, abdomen, genito-urinary, rectal, skin, orthopedic, nervous, heart, lungs, kidney, stomach, circulatory, feeble-minded, insane (pardon the digression), why has not some enterprising M. D. made a specialty of "attention to intelligent people"; I cannot enumerate all, but will mention a few more; the surgeon, gynecologist, children, male, female and even specialists for the fat and lean. The future specialist will, first, be a diagnostician; that is what every M. D. should be, for without it he is not a physician, simply an imitator, or a mechanic, of which there are many grades. Once a diagnostician (not by proxy), as "Dick" says urine is so and so; "Jerry" says stomach is so and so; "Harry" says reflexes are so and so; "Sam" says field of vision is contracted, right eye astigmatic and vision in same 20/40, left eye vision equals 20/200, but can't find the cause; a surgeon may be inclined to place more importance upon those findings which indicated the necessity of a brilliant operation; if an internal medicine man, he may stand by the opposite side of the equation as given to him. The one who does the work has a different spirit leading him, as his personal equation yields to the evidence that is clear cut, because it is more certain.

Here beginneth the future specialists: Tubercular infection invades every organ in our bodies, as do syphilis, typhoid, malaria, rheumatic, cancer, streptococcic, diplococcic, alcholism. You may be an expert at syphilis, but the orthopedic surgeon will draw the line if you approach the syphilitic joint. The skin man will defy you, the oculist ignore you. The streptococcic endometrium and tube following confinement may cause a ruffle between the obstetrican and gynecologists, by crossing the imaginary line between the bread-winning domains of adjoining neighbors; the obstetrician herd has entered the field of the gynecologist, who proceeds to reap the harvest, practically because of the time-honored argument, "Possession is Nine Points in Law," "O" imported, nourished, and multiplied cocci from 1 to 8 or 10 days, receiving the sum of $10.00 to $40.00 for his services, "G" receives from one to five hundred dollars for a much less expenditure of nerve force and labor. Other things equal, "O" was the better prepared to muzzle and destroy the enemy, he having observed his peculiar mode of invasion and degree of resistance.

In 1865, Robley Dunglison describes a specialist as, "One who devotes himself to a specialty; as to diseases of particular parts, as of the eye, ear, chest, etc." As practiced today the great Lexicographer's definition would need no revision. In 1904, Prof. C. M. Stevans' Revised Common Sense Dictionary says: "Specialist—a person who devotes himself to, or who has a special knowledge of some particular subject." The latter explanation is nearer in keeping with the known truths of this period, but has not been accepted by our specialists.

Is diphtheria a disease of the nose and throat and so treated and conceded as the property of the specialist? Answer. No, the up-to-date medical man immediately proceeds to secure and administer the remedy, usually in side or back of infected child because that part of his anatomy is best suited to receive the specific remedy. Search the storehouse of your knowledge and mention the disease, or diseases, purely local to any organ of man. Not a disease of heart, lung, stomach, kidney, intestine, bladder, bone, muscle, etc., but an infection which has invaded heart, lungs, etc., and is pronounced a disease of a special organ because its local manifestations are more pronounced. I cannot recall an infection which is technically local.

The meningitis infection (epidemic) has been found in the nose and throat of patients, but within the cerebrospinal cavities they seem to be at home; other pathologic bacteria produce cerebrospinal meningitis, yet differing in some respects, their most prolific field of action being other organs necessitating a remedy somewhat different, because of different toxines, if best results are expected. So in this a specialist would not be a specialist for the brain and cord, but a qualified bacteriologist, who can utilize both positive and negative evidence. The best and only scientific management of such is to

withdraw some spinal fluid, search and find the enemy, and treat accordingly. Puncturing the spinal canal is a delicate surgical procedure properly done, yet who calls the specialist to perform the task.

To follow the rule, which was recently attempted, to eliminate all so-called internal medicine men from using a surgical knife, would if applied to all alike, confine surgeons to traumatic surgical cases, for they and only they are truthfully local. Can all medical men do surgical work? No, but the percentage of medico-surgical men is fully as high as that of surgico-medical, and he who claims for himself and kind, a superiority entitling them to special privileges, or correctly speaking, seek and demand the curtailment of privileges from their equals leaving the self constituted judges monarch of all they survey, have forgotten one of the principles set forth in the declaration of American Independence, and one of the most beautiful attributes of civilization, *Modesty* as taught by their mothers from early infancy. The best surgeons of today are those who know most scientific medicine and practice same. Save the race from the ravages of those who boast, they know nothing save one of the numerous so-called specialties, as any one is but a fraction of the whole. Many mechanics are used in the construction of a locomotive, each in the part which he knows, but when the locomotive has been assembled and placed for duty, to whom is it entrusted on the mission of life or death—a mechanic? No. An engineer who is supposed to be familiar with all parts, and he must be if he is a high grade engineer.

It is not my province to draw anew imaginary lines through human anatomy and label each section, that future medical men might each take his choice for a specialty, and by close application to same, obtain superior skill, which would seem unnatural, as some specialists would unconsciously paint the map of the medical world, as it now exists.

The greatest physicians today (and by that I include every specialty) is the best diagnostician, clear cut, analytical; monarch of all he surveys, mentally and scientifically qualified to do the best for any defect found in any part of the body.

The thought confronts me here that scientific medicine pleads for few specialties, not limited by anatomical lines, but by the ravages produced by the direction and scope traversed by the cyclone. Knowing the enemy and its customs, one may elect to combat a certain class of infections, and they permeate the entire system, then in that sense he would be a specialist. Should he conquer with serum, antidotes, or combinations, honor him, for such is his due. Failing, discredit him not, for if abscess, paralysis, hypertrophy, atrophy, necrosis, distortion, dislocation, or fracture be left in the wake, he is best prepared to carry out or suggest treatment. It has been said one may be an operator and not a surgeon, but a surgeon is both. One who is skilled in operating and is not an analytical diagnostician should be leased to the latter, or enter other fields of labor, for his knife is far more dangerous than that of the diagnostician. The ideal is a diagnostician, therapeutist, and surgeon. The so-called internal medicine man and the surgeon take in the whole field of our professional work; others have taken a small section, side-stepped and by close application (some) have become more efficient in surgical manipulation and possibly medication in some instances than those not limited. Do not understand me to advocate the doctrine that all physicians should do everything brought to them. One who does not know when the tension of an eye is normal, plus or minus, has no right to prescribe for that eye, neither should he prescribe for an ear unless he is familiar with normal color and tension of the drum. If we have not studied the normal nose, septum, turbinates, and their relations to each other then keep out. I have been told a man cannot be informed upon all those branches which are simply component parts of the whole. The average man deceives himself in the thought that he cannot master it. Could all people of this community who when babes were given oil, paregoric, sage tea, and carried about by different members of the family from 8:00 p. m. till sunrise next day on account of colic (supposedly) the good doctor having been with them since midnight, appear in a body and remind us they fell asleep after the most miserable twelve hours of their existence, because an over distended middle-ear, from an acute infection, had ruptured the membrana tympani giving a measure of relief, we would blush with shame. Could we excuse ourselves because we were not specialists? Positively no. Can an internal medicine man keep half a dozen specialists with him for emergencies? Then what should he do? Stand erect, master the anatomical scientific, and practical elements of our profession and hurl defiance at the posers who either lack the energy or ability to do a thing so essential.

COOK COUNTY.

CHICAGO MEDICAL SOCIETY—

Annual Meeting, June 25, 1913.

The annual meeting was held June 25, 1913, with the president, Dr. Jacob Frank, in the chair. The various committees rendered their reports and the new officers were installed: Dr. Charles P. Caldwell, president; Dr. James A. Clark, president-elect; Dr. Charles H. Parkes, secretary; and John S. Nagel, treasurer.

Meeting of Alienists and Neurologists.

Under the Auspices of the Chicago Medical Society, June 23-25, 1913.

Dr. Harold Moyer, chairman.
Dr. W. T. Mefford, secretary.

PROGRAM

Address by the Chairman. Dr. Harold N. Moyer
Welcome Address by the President of the Chicago Medical Society. Dr. Jacob Frank

Introductory Address. Dr. L. Harrison Mettler

1. Degeneration Most Common to Alcoholism and Inebriety. Dr. T. D. Crothers, Hartford, Conn.
2. Acute Alcoholic Insanity.
   Dr. W. F. Lorenz, Mendota, Wis.
3. The Causes of Acquired Insanity.
   Dr. J. Cheston King, Atlanta, Ga.
4. Hydrotherapy in the Treatment of the Insane.
   Dr. A. H. Dollear, Chicago
5. Obscure Mental Diseases a Menace to Public Safety. Dr. Robert Percy Smith, Seattle, Wash.

MONDAY, 2 P. M.

PROGRAM.

6. Insanity with Special Reference to the Diagnosis and Prognosis of Its Common Forms.
   Dr. T. B. Throckmorton, Des Moines, Iowa
7. Report of a Case of Myxedema Associated with Intoxication Psychosis.
   Dr. E. F. Leonard, Jacksonville, Ill.
8. Poliomyelitis.
   Dr. Frank P. Norbury, Springfield, Ill.
9. Infantile Cerebral Palsy.
   Dr. H. C. Hardt, Lincoln, Ill.
10. Advantage of Field Work in the Study of Mental Defections. Dr. A. C. Rogers, Fairibault, Minn.
11. Surgery in Hospitals for the Insane.
    Dr. E. M. Green, Milledgeville, Ga.
12. Prophylactic Value of Home Training in the Line It Should Take.
    Dr. H. C. R. Norriss, Enderlin, N. Dak.

TUESDAY, 10 A. M.

PROGRAM.

13. Dementia Praecox.
    Dr. B. V. Evans, Greystone Park, N. J.
14. Deterioration in Dementia Praecox.
    Dr. Charles Ricksher, Hospital, Ill.
15. Is Dementia Praecox a Toxic Condition?
    Dr. Bayard Holmes, Chicago
16. The Wassermann Test in a Series of Cases of Dementia Praecox.
    Dr. M. A. Bahr, Indianapolis, Ind.
17. The So-Called Mixed States and Atypical Cases of Manic-Depressive Insanity.
    Dr. H. Douglas Singer, Hospital, Ill.
18. Depressed States Apparently Not in the Manic-Depressive Group. Dr. S. N. Clark, Hospital, Ill.

TUESDAY, 2 P. M.

PROGRAM.

19. Ways and Means of Preventing Physical and Moral Degeneracy.
    Dr. G. M. Hill, Des Moines, Iowa
20. Some Data Gathered in a Study of 269 Murderers.
    Dr. Rock Sleyster, Waupun, Wis.
21. Are Criminals Insane Individuals?
    Dr. C. H. Anderson, Menard, Ill.
22. Constitutional Immorality.
    Dr. Paul E. Bowers, Michigan City, Ind.
23. Epilepsy and the Segregation Plan of Treatment.
    Dr. D'Orsay Hecht, Chicago
24. The Proper Care and Sterilization of Mental Defectives. Dr. H. M. Cary, Spring City, Pa.

Introducing Resolutions.

WEDNESDAY, 10 A. M.

PROGRAM.

25. Presenile Psychoses.
    Dr. E. Z. Levitan, Peoria, Ill.
26. Traumatic Psychoses.
    Dr. John H. Rhein, Philadelphia
27. Paranoia. Dr. Charles Read, Kankakee, Ill.
28. The Need of Some Systematic Method to Determine the Mental Integrity of Employees of Railroads and Other Transportation Companies.
    Dr. Theo. Diller, Pittsburgh, Pa.
29. X-Ray and Study of Vessels.
    Dr. A. G. Wittman, Elgin, Ill.
30. The Psychological Clinic as a Eugenic Agency.
    Dr. C. H. Town, Lincoln, Ill.

WEDNESDAY, 2 P. M.

PROGRAM.

31. The Progress of Histopathology of the Cortex in Mental Diseases.
    Dr. Henry C. Cotton, Trenton, N. J.
32. The Effect of Syphilis on the Central Nervous System Viewed in the Light of Recent Research.
    Dr. Albert E. Sterne, Indianapolis, Ind.
33. Medical Efficiency in the Care of the Insane.
    Dr. A. M. Barrett, Ann Arbor, Mich.
34. The Aims of the Psychiatric Clinic.
    Dr. Adolph Meyer, Baltimore
35. Forty Years' Experience in Construction and Administration for the Insane in the Middle West.
    Dr. Richard Dewey, Wauwatosa, Wis.
36. The So-Called Psychopathic Hospital and What It Is Accomplishing in the Treatment and Supervision of the Insane.
    Dr. M. N. Voldeng, Cherokee, Iowa

WEDNESDAY, 8:30 P. M.

PROGRAM.

37. General Paralysis in the Negro.
    Dr. F. M. Barnes, Jr., Washington, D. C.
38. The Diagnosis of Feeble-Mindedness.
    Dr. Henry H. Goddard, Vineland, N. J.
39. Some Types of the Feeble-Minded.
    Dr. C. B. Caldwell, Lincoln, Ill.
40. Inheritance of Some of the Elements of Hysteria.
    Dr. C. B. Davenport, Cold Spring Harbor, N. Y.
41. Social Hygiene as an Aid in Preventing Mental Diseases. Dr. William House, Portland, Ore.
42. Truth and Fiction About Psychotherapy.
    Dr. Tom A. Williams, Washington, D. C.
43. Insanity with Cerebral Disease.
    Dr. H. P. Sights, Hopkinsville, Ky.
44. The Interpretation of Dreams Based on Various Motives. Dr. Meyer Solomon, Chicago

CRAWFORD COUNTY

The Crawford County Medical Society met in regular session at the M. E. Church in Palestine, Ill., Sept. 11, 1913. The president being absent the meeting was called to order by Vice-President I. L. Firebaugh, at 2:00 p. m.

The following physicians were present: I. L. Firebaugh, C. E. Price, H. N. Rafferty, C. H. Voorheis, Charles Davis, A. Lyman Lowe, J. E. Midgett, O. G. Taylor, G. A. Martin, L. R. Illyes, Roy Newlin, Dr. Thompson and Dr. Zeigler.

The minutes of the previous meeting were read and approved. On motion the secretary was instructed to send a synopsis of each meeting to the state society for publication in the Illinois Medical Journal.

A very interesting paper on "Typhoid Fever," was read by Dr. J. E. Midgett. The paper was a timely one and brought forth some very interesting points in the management and treatment of the disease. The paper was fully discussed, each member present taking a part in the discussion, with Dr. Midgett closing the discussion.

Dr. C. H. Voorheis reported a case of "Infantile Cretinism" in a child about three years of age with presentation of the child and giving a complete history of the case from the time the child was one year old until the present time. This case had been treated for about two years continually with thyroid extract and had also had two thyroid grafts implanted during the time of treatment. Dr. Voorheis had watched the case very closely from its earliest history and considered the case was making marked improvements under the thyroid treatment. The society voted thanks to Dr. Voorheis for the presentation of the case and also the mother and child for appearing before the society.

The physicians of Palestine very generously invited the society to a chicken supper at the Caley Hotel, and the meeting adjourned and partook of the supper, having an enjoyable time and feeling that they had been well paid for their attendance at the meeting.

Le Roy Newlin, Secretary.

IROQUOIS-FORD BI-COUNTY.

The physicians of Iroquois and Ford counties, members of the Bi-County Medical Society, with their wives and friends, on the evening of September 2, united in honoring one of their oldest and most faithful members, Dr. S. M. Wylie of Paxton, at the annual banquet of the society given at the opera house in Gilman, Ill. The banquet, served by the ladies of the Rebekah Lodge, was one of the most elaborate affairs ever given by the society, and it was enjoyed by a very large representation. During the banquet music was furnished by the Piper City orchestra.

At the close of the banquet, Dr. E. E. Hester, president of the society, introduced Dr. Geo. A. Nash of Gibson City, who responded to the toast, "The Physician's Wife," giving her much praise for the success the doctor may attain because of her influence as companion, counsellor and friend in his busy life. He said that the old adage, "Whosoever findeth a good wife, findeth a good thing," is certainly true and will do him no evil.

The toast, "The Family Physician," received careful attention in the response given by Dr. N. T. Stevens of Clifton, who spoke of him as "Humanity's most faithful and also many times, sadly unappreciated friend." Dr. Stevens said in part: "Excellence of character and honesty of purpose go a long way in life and talent may not be trusted unless it is based on truthfulness. Intellect does not tell as much as character. Under all circumstances and conditions, character should stand out as a leading factor in the case of the family physician. Clever trickery on the part of the doctor may be covered up only for a time, and trusting him is a privilege which the patient deserves. In the practice of medicine hypocrisy creates ridicule, and the physician should stay within the bounds of his qualifications.

"Our Brother Physician" was responded to by Dr. D. W. Miller of Gilman. He said, "It is the duty of every physician to be cordial and pleasant with a brother physician, for it is the sting and humiliation of unkind actions in a professional way which bring the gray hairs and wrinkles to the man who has been treated in this manner." Dr. Miller said he had known Dr. Wylie for 33 years and did not know of one occasion where he had ever broken this code of ethics. It is this trait which has made for him so many friends and won for him the success which he has enjoyed.

Dr. S. M. Wylie of Paxton, the guest of honor, responded at this time and expressed his deep appreciation of the honors which had been bestowed upon him. He said, "Thirty-five years of professional life is a short period in retrospect, and yet within those years, Time, the tomb builder, has buried many of our professional theories and practices, covered them over with dust and written over them 'oblivion.' Retrospect at best is but a vantage ground from which to measure progress. The ashes of our camp fires along the journey show us where we pitched out tents yesterday, or last year, and mark the distance we have since advanced on the onward march. We are going to camp tomorrow and next year, but how we will meet the duties of the day is of vastly more importance to us tonight. To have personally known and worked under the inspiration of Billroth, Von Bergman, Lord Lister, Lawson Tait, Sir Spencer Wells, Mickulicz, Sir William McCormack, Koenig and Senn and that host of immortals in medicine and surgery, who blazed the trails we are following today, to me has been a rare privilege and a pleasant memory, and yet I wish I could journey with you for the next twenty-five years and witness the wonderful life saving discoveries that you of the younger generation will see grow out of the labors the generation just past have bequeathed to us. There never was a time in the history of the world when great practical principles and discoveries for saving human life and mitigating human suffering have followed each other in such rapid succession as today,

and yet today's discoveries are only a faint promise of future possibilities."

The last toast, "The Brother I'll Never Know," by J. L. Shawl was as follows:

"Here is a toast I want to drink
To the brother I'll never know,
To the brother who's going to take my place
When it's time for me to go.
I've wondered what kind of a chap he'll be,
And I wish I could take his hand,
Just to whisper, 'I wish you well, my brother,'
In a way he'd understand;
I'd like to give him the cheering word
That I've longed at times to hear;
I'd like to give him the warm hand clasp
Whenever a friend seemed near.
I've learned my knowledge by sheer hard work,
And I wish I could pass it on
To the fellow who'll come to take my place
Some day when I am gone.
Will he see all the sad mistakes I've made
And note all the battles lost?
Will he ever guess the tears they caused
Or the heartaches which they cost?
Will he gaze through failures and fruitless toil
To the underlying plan,
And catch a glimpse of the real intent
And the heart of the vanquished man?
I dare to hope he may pass some day
As he toils as I have wrought,
And gain some strength for this weary task
From the battles I have fought.
But I've only the task itself to leave
With the cares for him to face,
And never a cheering word may speak
To the fellow who'll take my place.
Then here's to your health, old chap,
I drink as a bridegroom to his bride,
I leave an unfinished task to you,
But God knows how I've tried.
I've dreamed my dreams as all men do,
But never a one came true,
And my prayer tonight is that all the dreams
May be realized by you.
And we'll meet some day in the Great Unknown
Out in the realm of space;
You'll know my clasp as I take your hand
And gaze in your tired face.
Then all our failures will be success
In the light of the new found dawn,
So I'm drinking your health, old chap,
Who'll take my place when I'm gone."

This was followed by expressions of appreciation of the friendship and brotherly feeling toward Brother Wylie by other members of the society. Then the company swung into the dance to the strains of music that would not let a lover of music keep his chair. At a late hour the company departed for their homes with light hearts and cherry "Good-nights," feeling they had been repaid for the many miles traveled to pay tribute to the member they have all learned to respect and honor.

J. L. SHAWL, Secretary.

LAKE COUNTY

On September 5 ten members of our society attended the annual meeting of the Second District Medical Society of Wisconsin, which was held at the Country Club in Racine.

After a very enjoyable banquet there were responses to a number of toasts. Dr. Tombaugh replying for our society in his usual interesting and pleasing way. Dr. Abt of Chicago, the well-known specialist in pediatrics, gave a very interesting and instructive talk upon the "Nutritional Disorders of Infancy," giving a short history from the earliest times, speaking especially of the teachings of Czerny and Finkelstein.

The fall meeting of the Lake County Medical Society was held at Wauconda, Sept. 10. After a short ball game, the members and quite a number of school children met in the town hall, where Dr. Watterson gave a demonstration of a large number of specimens of tuberculous meat.

An excellent supper was served at the Oakland Hotel, to which we all did full justice.

Soon afterwards we assembled again in the town hall with fully 100 farmers and dairymen, and their wives and children present.

After a short business meeting and the election of Dr. A. H. Waddington of Lake Zurich as a member, Dr. Watterson gave another demonstration of the specimens of tuberculous meat for the benefit of all present, and read a very interesting paper on "Tuberculosis in Cattle," the measures that should be taken to prevent its spread, and to prevent infection of the milk.

Dr. Foley, Health Commissioner of Waukegan was on the program for a paper on the milk question "from the farmers' standpoint," but in his absence the paper was read by the secretary. He gave the farmers and dairymen some excellent advice along the lines of cleanliness and furnishing good milk for the public use.

Prof. Kent, President of the Village Board, also gave a very interesting and instructive talk, after which there was a short discussion. The audience then gave the society a unanimous vote of thanks.

The physicians present were: Dr. Tombaugh, who presided over the meeting in the absence of the president and vice-president. Drs. Fuller, McCormick, Watterson, Waddington, Rossdentscher, of Volo; Schirding, of Palatine; Meyer, of Des Plaines, and the secretary. Drs. Galloway, Smith, Withers and Wright attended the supper.

The next meeting will probably be held in Waukegan in January.

W. C. BOUTON, Secretary.

MADISON COUNTY

The Madison County Medical Society met under a large elm tree on the grounds of the Harrison Tuberculosis Tent Colony at Collinsville, Aug. 1, 1913, with Vice-President E. A. Cook in the chair. Members present: Drs. Barnsback, Dorr, Wharff, Cook, Kaeser, Schmidt, Burroughs, Sutter, W. H. C. Smith, Schroeppel, Ferguson, Hastings, Harrison, E. F. Fischer, Siegel, Armbruster, Hirsch, Spitze, Zoller, Braner and E.

W. Fiegenbaum. Visitors: Drs. O. H. Brown and E. Bonnott, St. Louis; Dr. T. Van Boyd, East St. Louis, and Dr. W. S. Harrison, Collinsville.

The speaker of the day, Dr. O. H. Brown of St. Louis, presented an address on "Diet in Fevers," in which he laid great stress on increasing the carbohydrates in the diet given to all fever patients, especially in typhoid fever. The address was well received and ably discussed by Dr. Kaeser of Highland, Dr. Hirsch of Edwardsville, and others. Altogether this meeting was very interesting and instructive and was enjoyed by all present. A very substantial lunch was served *al fresco* by Dr. and Mrs. Harrison and on motion of Dr. Hastings a vote of thanks was tendered them for their gracious hospitality. On motion of Dr. Kaeser a vote of thanks was given to Dr. Brown for his visit and instructive lecture. On motion the society adjourned to meet in Edwardsville on the first Friday in September.

E. W. Fiegenbaum, Secretary.

MONTGOMERY COUNTY

Owing to rain, the date of the Raymond meeting was changed to August 22. In the absence of both president and vice-president, Dr. Z. V. Kimball was selected as the presiding officer. The following were in attendance: Z. V. Kimball, M. L. Moyer, J. R. Seymour, H. A. Seymour, J. R. Kenton, W. H. Mercer, W. B. Kilton, R. W. Allen, W. W. Douglass, I. O. Wilcox, M. W. Snell, L. S. Brown, C. H. Lockhart, W. I. Burns and H. F. Bennett.

Dr. J. R. Kenton gave a most interesting talk upon his post-graduate course at Johns Hopkins University Hospital this summer. Dr. Kenton is a critical observer and is gifted in expressing his observations. His summer's work was not only an inspiration to him but his enthusiasm to do better work infected all who listened to his talk.

He appropriately suggests that our society work can be improved by paying more atention to clinical work, not the work of some eminent visitor but our own clinical methods.

MORGAN AND CASS COUNTIES

Thursday, Aug. 14 the members of the Cass and Morgan county medical societies and their families and neighbors met with Dr. and Mrs. Carl E. Black at their county home, "Walnut Grove," near Little Indian, for their second joint meeting, which was in the form of a basket picnic.

The baskets were opened and arranged upon the cool spacious porch of the bungalow and the picnic dinner was much enjoyed. After dinner a group picture was made by Robert Reid and the company adjourned to the meeting tent, where Dr. A. J. Ogram, vice-president of the Morgan County Medical Society, presided, Dr. J. A. Magee of Virginia acting as secretary.

After the minutes of the first joint meeting at the same place last year had been read and approved, Dr. Ogram introduced Capt. Guy V. Rukke, M. C., U. S. A., from Jefferson Barracks, St. Louis, Mo., who presented in a very graphic way the achievements that the army surgeons have made in the prevention of typhoid fever by vaccination. This vaccination means a great deal to any community from a public health standpoint and practically every physician present took part in the discussion which was ably introduced by Dr. J. G. Franken of Chandlerville.

Following the discussion of the paper resolutions of thanks to Capt. Rukke for his paper and Dr. and Mrs. Black for the hospitality of "Walnut Grove" were unanimously passed. About seventy persons were in attendance.

ROCK ISLAND COUNTY

Rock Island County Medical Society met in regular session at Rock Island Club, Rock Island, on Tuesday evening, August 12, 1913. The business session was short and routine. The scientific program was heard by twenty-seven members and two visitors. Dr. A. J. Miller gave a partial "Report of a Case of Exophthalmic Goitre," occurring in a five-year-old child. Dr. J. E. Asay read a paper on "Tuberculosis of the Nose and Throat"; Dr. C. J. Whalen of Chicago, president of the Illinois State Medical Society, expounded "Recent Diagnostic and Treatment Methods in Tuberculosis"; Dr. Peter Bassoe of Chicago, delivered a lecture covering some of the "Newer Spinal Cord and Brain Operations." Through the enforced absence of the author, the scheduled paper of Dr. W. L. Eddy was deferred. The guests of the evening, Drs. Whalen and Bassoe, were tendered a rising vote of thanks in appreciation of their good-will in accepting our invitations, and for their able contributions. The evening in general partook more of the nature of didactic instruction than of general discussion, and was thoroughly enjoyable and profitable.

W. D. Chapman, Secretary.

WINNEBAGO COUNTY

The Winnebago County Medical Society met at Nelson Hall, Rockford, Ill., Sept. 9, 1913. Dr. Emil Lofgren was in the chair. Members present 17. Minutes of previous meeting were read and approved. The following doctors had just returned from Europe and gave short talks relating to their visit: Drs. J. E. Allaben, W. R. Fringer and H. M. Starkey, all of Rockford. This program was very interesting, especially regarding the visit of the doctors in London at the International Congress of Physicians.

Dr. C. M. Ranseen, Secretary.

News Notes

—A twenty-room addition to the buildings of Beverly Farm, Godfrey, has been completed. This gives the farm a capacity of sixty-five patients.

—The eighteenth annual State Conference of Charities and Correction will be held in Rockford, October 11-14. A. L. Bowen, Springfield, is secretary of the conference.

—The International Congress of Medicine held at the University of London is said to have given the gold medal, the only award in this class, for digestive ferments, to Armour & Co., Chicago.

—The following staff of physicians has been appointed for Mooseheart, the industrial home of the Loyal Order of Moose: Drs. H. A. Brenneke and George A. Darmer. A building for the hospital is now under construction and work on the permanent building will be started this fall.

—The Washington Boulevard Association is erecting a five-story building at Washington Boulevard and North Campbell avenue to cost about $100,000. The building is to cover a ground area of 126x70 feet. Dr. Albert I. Bouffleur is chief surgeon of the association.

—The Champaign County Anti-Tuberculosis Health League has established a dispensary in the Imperial Building, for tuberculosis only. The dispensary will be in charge of physicians of Champaign and Urbana, and patients will be received between 1 and 2 p. m., on Monday, Wednesday and Friday.

—Dr. F. J. Lutz, professor of surgery at Washington University, St. Louis, Mo., gave a Chautauqua address at Jacksonville, August 28, on "The Cancer Problem." The instructive talk was graphically aided by good stereopticon pictures. Within ten days two breast cases presented themselves to local surgeons as a direct result of the lecture. Previous to the lecture Dr. Lutz was entertained at a basket picnic dinner by the members of the Morgan County Medical Society and their families.

—The State Charities Commission, in its annual report, urges the establishment in large centers of population of psychopathic hospitals for the care and treatment of the acute varieties of insanity, at which the commitment will be purely voluntary. It favors making the present state hospital into colonies for strictly chronic cases. It recommends that the first psychopathic hospital shall be established in Cook County. The commission urges that the study of psychiatry be made compulsory in all medical schools so that every person who enters the practice of medicine may have at least elementary knowledge regarding nervous and mental affections. A children's bureau, having broad power to deal with the dependent and delinquent classes, is also recommended by the commission.

—The following appointments to the faculty of the University of Illinois were announced by the president, August 26: Dr. Albert C. Eycleshymer, St. Louis, professor of anatomy and head of the department of anatomy of the medical school; Dr. Richard Rupert, Chicago, instructor of anatomy; Dr. George P. Dreyer, Chicago, professor of physiology and head of the department of physiology, school of medicine; Dr. Bernard Fantus, Chicago, professor of pharmacology; Dr. Edgar Grim Miller, Columbia, Pa.; Dr. J. Craig Small, Chambersburg, Pa., and Dr. H. N. Walker, Harrisburg, Pa., assistant professors of physiologic chemistry; Dr. Edgar D. Coolidge, Chicago, professor of materia medica and therapeutics; and Dr. Louis Schultz, Chicago, assistant professor of oral surgery and pathology.

Personals

Dr. S. V. Balderston, health commissioner of Evanston, has resigned.

Dr. Perry H. Wessels, Jr., has been reappointed city physician of Moline.

Dr. J. Leslie, Elwin, celebrated his seventy-fifth birthday anniversary September 1.

Dr. John P. Benson, Joliet, has been appointed physician at the State Penitentiary.

Dr. Paul Sherman, Shawneetown, has been appointed inspector of the State Board of Health.

Dr. Joseph M. Campbell, Marissa, has been appointed superintendent of the Watertown State Hospital.

Dr. E. H. Butterfield, Ottawa, for sixteen years county physician, announces his retirement from the practice of medicine.

Dr. Joseph Cooperstein, Chicago, has been appointed assistant physician at the Chester State Hopital, vice Dr. William Hersio.

Dr. Truman W. Brophy has been decorated by the French Minister of Public Instruction on account of his work on oral surgery.

Dr. and Mrs. W. Grant Hatch, Rockford; Dr. and Mrs. John A. Koch, Quincy, and Dr. G. F. Tyson, Evanston, have sailed for Europe.

Dr. E. W. Fell, Jacksonville, has been appointed assistant physician at the Elgin State Hospital, vice Dr. E. J. Kelloch, resigned.

Dr. Russell V. Thomas has been appointed local surgeon for the Illinois Central Railroad at Manteno vice Dr. Zephrita Rouleau, deceased.

Dr. Anna Dwyer, Chicago, has been appointed a member of the State Charities Commission, vice Dr. John T. McAnally, Carbondale, resigned.

Dr. W. K. McLaughlin has given up his practice in Jacksonville and moved to Chicago to become superintendent of the Chicago Hospital.

Dr. Edward Cunat, 556 W. 18th street, Chicago, has purchased a pulmotor, said to be the first privately owned one in the city or state.

Dr. C. O. Molz, Murphysboro, sustained a fracture of the left shoulder and injuries of the hip by the overturning of his automobile, August 31.

Dr. G. W. Torrey was exonerated by a coroner's jury September 9 after inquiries into the death of Mrs. Elizabeth Bird, who was struck by Dr. Torrey's automobile, September 3.

Dr. J. S. Mason has been elected president, Dr. A. Darwin Kirby, vice-president and Dr. W. M. Honn, secretary of the medical staff of the Julia F. Burnham Hospital, Champaign.

Dr. B. G. R. Williams, Paris, announces that his practice is limited to diagnosis and differentiation of disease by physical and analytical methods and to diagnostic consultation work.

Dr. Isaac C. Frisch, a member of the staff of the Chicago State Hospital, Dunning, has been transferred by the state to the Chester Hospital, Menard, succeeding Dr. William H. Hercik.

Dr. O. B. Edmonson of Clinton, Ill., was operated on for appendicitis September 10 by Drs. Collins and Weber of Peoria, at the John Warner Hospital in Clinton, and is making a good recovery.

Dr. T. McLain, assistant physician at the Peoria State Hospital, has been transferred to the Jacksonville State Hospital, vice Dr. Walter Treadway, resigned, to enter the U. S. P. H. Service.

Dr. George B. Young, commissioner of health, has been placed in charge of the new city garbage reduction plant to be acquired from the Chicago Reduction Company under the ordinance recently passed.

Drs. Thomas G. McLin, Charles R. Lowe and Edward J. Strickler have been added to the staff of the Jacksonville State Hospital to take the places of Drs. F. E. Munch, Walter L. Treadway and Edward F. Leonard, resigned.

Dr. Arthur M. Corwin has resigned from the department of laryngology and rhinology in the medical department of the University of Illinois, after thirteen years of continuous service as a member of the faculty, formerly as Professor of Physical Diagnosis and laterly Assistant Clinical Professor of Laryngology and Rhinology.

Dr. and Mrs. J. B. Murphy, Dr. and Mrs. T. J. O'Malley, Dr. C. A. Leenheer, Dr. and Mrs. Cassius C. Rogers, all of Chicago; Drs. George W. Kreider and L. C. Taylor, Springfield; Dr. John E. Allaben, Rockford; Dr. and Mrs. Walter Hoffman, Mount Morris; Dr. and Mrs. Otis Trotter and daughter, Quincy, and Dr. J. F. Percy, Galesburg, have returned from abroad.

Removals

Dr. A. W. Daggett has removed from Mulkeytown to Du Quoin.

Dr. A. T. Botts has removed from Warrensburg to 1364 North Church street, Decatur.

Drs. J. T. Rea and Albertine L. Rea, of Beverly, have removed to Warrensburg.

Incorporations

Not for profit:

Chicago Memorial foundation; to purchase, own and maintain hospitals, colleges and universities; to teach medicine and surgery; to engage in medical researches; public benefit and education; Edwin M. Ashcraft, R. M. Ashcraft, H. S.

Marriages

Warren Garfield Murray, M.D., to Miss Marion Louise Macfarlane, both of Kankakee, Ill., August 31.

William K. Farley, M.D., Fulton, Ill., to Miss Sarah Sturges, at Dixon, Ill., August 16.

Nazareth A. Jerijian, M.D., to Miss Semagule Doodakyan, both of Chicago, August 30.

Public Health

The U. S. Department of Agriculture, through the Bureau of Chemistry, Sept. 14, 1913, issued the following warning to the public in regard to the so-called radioactive mineral waters offered for sale in bottles.

There are indications of the beginning of an attempt to perpetuate a great fraud on the Amer-

ican people through advertising certain mineral waters as possessing radioactivity. These waters, in some cases, are taken from springs the waters of which as they come from the ground do possess certain radioactive properties. Examination of many of these waters by the department's specialists indicate that whatever radioactivity they possess at the spring is due almost entirely to radium emanation rather than to the presence in the water of any substance possessing radioactivity. These emanations in the form of gas quickly disappear from the water and as a result, after the water has been bottled a short time, it will possess practically no radioactivity. The belief long held by many people that some mineral waters used at the springs are more effective than when bottled has been explained by some authorities on the ground that the beneficial effect of these waters is due to radioactivity. As the radioactivity disappears soon after the water is taken from the spring, any effect due to the radioactivity must be lost in a short time. If the radioactivity of a water in a spring is 100, four days after bottling it will be only 50 and twelve days after bottling 10. In a month it will be practically nothing compared with the original radioactivity of the water at the spring. The public, therefore, is warned to regard with suspicion any water advertised as possessing radioactivity. As far as the government's specialists have been able to ascertain, no bottled water, no matter how radioactive it may have been at the spring, retains this radioactivity for any length of time.

The department is now investigating a number of the so-called radioactive waters with the object of securing evidence that can be made a basis of prosecution for misbranding. In the past before the Food and Drugs Act was enacted, a number of mineral waters made claim to curative properties which they did not possess and succeeded in creating a misplaced confidence on the part of the consumers. This was particularly true of a number of imported waters which were sold extensively in the United States with a statement on the bottle that they were wonderful or magical cures for all sorts of incurable or chronic ailments. The Treasury Department, acting in cooperation with the Department of Agriculture, now refuses admission to the country of foreign waters labeled so as to mislead consumers as to their real or curative properties. The department fears that unless the public is warned that the fraudulent trade in so-called radioactive waters will develop, just as the fraudulent trade in other mineral waters was developed to the point where people with strong imaginations will supply their bottlers with all sorts of testimonials asserting that these supposed radioactive waters have effected wonderful cures.

—The Missouri law prohibiting cellar homes which went into effect September 15 last, shows an enlightened understanding of sanitary requirements on the part of those who were responsible for its enactment. There are too many people living in Chicago and even in some of the smaller cities of Illinois in dark, damp, ill-ventilated rooms that should never be allowed to house anyone. The trouble is partly structural, due to faulty requirements or enforcement of the building ordinances, partly chargeable to poverty, ignorance, greed and dirt, in the case of families crowded into insanitary quarters. The time is not far away when some comprehensive method of providing decent and sanitary homes for the laboring classes must be undertaken by our cities to prevent racial deterioration such as has dwarfed many of our immigrants from eastern Europe. Berlin, London, Liverpool and New York have met similar or worse conditions of congestion, each in its own way, but generally by the construction of "model tenements," which not only provided sanitary quarters for many families directly, but demonstrated to capitalists and philanthropists how they also could invest money that would be a public benefaction and still pay a reasonable interest. In London great slum districts covering blocks were razed, new streets laid out and built up with modern tenements. Suburban villages have also been constructed to meet the requirements of city workmen, and where transportation is rapid this is one of the most promising ways of combating city congestion. All such plans, however, imply a decent living wage and thus the whole question of sanitary housing is tied firmly to the still greater question of the relations of capital and labor.

—The United States Department of Agriculture has established a publicity department or "Office of Information" to disseminate information which we will quote freely whenever it seems to be of interest to our readers. We note two

convictions under the pure food law: 1. A New York firm was fined for shipping into Missouri a "Coal Tar Yellow Color—Macaroni Shade," said to contain arsenic. 2. An Indianapolis firm was fined for shipping "Celery-Visce," labeled harmless, containing 4 per cent acetphenetidin.

—Beginning this fall Harvard University and the Massachusetts Institute of Technology are to maintain in co-operation a School for Public Health Officers. The facilities of both institutions are to be available to students in the school and the certificate of public health (C. P. H.) is to be signed by both President Lowell and President Maclaurin.

The object of this school is to prepare young men for public health work, especially, to fit them to occupy administrative and executive positions such as health officers or members of boards of health, as well as secretaries, agents, and inspectors of health organizations.

It is recognized that the requirements for public health service are broad and complicated, and that the country needs leaders in every community, fitted to guide and instruct the people on all questions relating to the public health. To this end, the instruction of the new school will be on the broadest lines. It will be given by lectures, laboratory work, and other forms of instruction offered by both institutions, and also by special instructors from national, state, and local health agencies.

The requirements for admission are such that graduates of colleges, or technical and scientific schools, who have received adequate instruction in physics, chemistry, biology, and French or German, may be admitted to the school. The medical degree is not in any way a pre-requisite for admission, although the administrative board strongly urges men who intend to specialize in public health work to take the degree of M.D. before they become members of the School for Health Officers.

The administrative board which will conduct the new school is composed of Professor William T. Sedgwick, of the Massachusetts Institute of Technology; Professor Milton J. Rosenau, of Harvard, and Professor George C. Whipple, of Harvard. Professor Rosenau of Harvard has the title of director, and the work of the school will be under his immediate supervision.

—Victor G. Heiser, Surgeon, U. S. Public Health Service, Chief Quarantine Officer and Director of Health for the Philippine Islands, in the *Public Health Report* for Sept. 5, 1913, issued the following note regard the apparent cure of two lepers in Manila:

Two patients who had been confined to the San Lazaro Leper Hospital on account of leprosy have been pronounced apparently cured and discharged from that institution on probation.

The first case was that of a male Filipino, aged 27, who was admitted to the San Lazaro Leper Hospital, Manila, May 29, 1909. On admission the case clinically showed thickened reddish spots on the nose and thickening and discoloration of the lobe of the right ear. Scrapings made from the lesions showed lepra bacilli. He received vaccine treatment at intervals, beginning August, 1909, but at the expiration of one year no change was noted in his condition. From September, 1910, to November, 1910, crude chaulmugra oil was given by mouth in increasing doses. On account of nausea the administration of the oil by mouth had to be discontinued.

The case showed evidences of improvement. On November 10, 1910, chaulmugra oil combined with oil of camphor and resorcin was given hypodermically. By May 6, 1911, the lesions above described had disappeared and leprosy bacilli were not found in repeated microscopical examinations. The hypodermic treatment was continued and microscopical examinations were made at frequent intervals, but these were always negative. On June 11, 1913, a most careful clinical and microscopal examination was made of the patient, which resulted negatively for leprosy, and as the patient had now been apparently cured for a period of over two years he was discharged on probation.

The other case was that of a Filipino woman, aged 22, who was admitted to San Lazaro Leper Hospital, Manila, January 7, 1910. Clinically this patient presented a suffused countenance due to generalized infiltration. There were red macules over the cheeks, forehead and chin. Scrapings made from the lesions and examined microscopically were positive for leprosy bacilli.

Upon admission this patient was placed upon the vaccine treatment for a period of five months, but at the end of the first month after her admission crude chaulmugra oil by mouth was given in addition to the vaccine.

After the second month the patient began to improve rapidly, and on May 6, 1911, leprosy bacilli could not be found on microscopical examination. During May, 1911, on account of the nausea caused by the oil its use by mouth had to be discontinued. Hypodermic injection of chaulmugra oil combined with camphor and resorcin was then begun. This treatment was continued, and frequent microscopical examinations were made from time to time, all of which resulted negatively. The last examination, both clinical and microscopical, was made on June 11, 1913, when no further evidences of leprosy could be found. The patient was therefore discharged from the hospital on probation.

It is not known whether the vaccine treatment had any influence in the cures. There are at the present time a number of other cases at the San Lazaro Leper Hospital that have been negative for a period of 22 months, which, upon admission, presented more marked evidences of leprosy than the cases mentioned above, yet they received only chaulmugra oil either by mouth or hypodermically, or in both ways.

—The following instructions for persons exposed to industrial diseases, especially lead, are taken from a circular issued by the medical clinic, Cornell University Medical College, Out-Patient Department:

General Information.

1. Dusty occupations cause colds and infections, irritate the nose and throat, and weaken you.

2. Fumes cause thin, poor blood, weak muscles, indigestion, and weak hearts.

3. All workers exposed to dust and fumes should have good ventilation, open windows, and protective devices as exhaust fans, hoods and blowers.

Metal Poisons, Chiefly Lead.

1. Lead causes more poor health among workmen than any other metal; leads to indigestion and "colic," chronic disease of heart, blood vessels and kidneys, and paralysis of the hands—"wrist drop."

2. Young adults are easily poisoned by lead. Young women often get the worst forms of it.

3. Lead acts slowly and silently by constant exposure, and causes illness without the workman's knowledge of his danger. He must, therefore, be most careful.

4. Lead enters the system through the nose, mouth, and skin; that is, it may be inhaled as dust, in fumes, swallowed with food and saliva (especially if tobacco or gum is chewed) and absorbed by the skin.

5. In New York City those trades that especially expose the workers to lead poisoning are: White and red lead manufacture, painters, plumbers, typesetters, file makers, storage battery makers, metal hardeners and polishers.

Rules for Prevention of Lead Poisoning Outside the Factory.

1. Keep general health always good by plenty of light, good food and fresh air in the home. Sleep at least eight hours every night.

2. Personal cleanliness must be had. Wash with warm water and soap daily, always before eating, and at least one full hot bath a week. Remove all dirt from under finger nails.

3. Never chew tobacco or gum when working. The lead dust on fingers is sure to be swallowed.

4. Don't drink liquor of any kind. Alcoholic intemperance causes attacks of lead poisoning, weakens the kidneys, and causes paralysis.

5. Never eat when you can avoid it in same room you work in.

6. Always eat a good breakfast before going to work, especially drink milk.

7. Do not wear same clothing on street or at home that you work in. Use overalls.

8. Have at least one good bowel movement every day.

9. Exercise in the fresh air. Live, when possible, some distance from work and walk both ways.

10. Take good care of teeth and gums. A decayed tooth favors lead symptoms. See your physician before going to work in lead factory, and at frequent intervals thereafter—at least once a month.

J. Stanley Kenney, M.D., in Medical Record.

The words "sanitation" and "hygiene" mean little more than cleanliness. Cleanliness will eradicate the fly; it will eradicate the typhoid germ, the tuberculosis germ and the small-pox germ as well. It is probable that perfect cleanliness would eliminate most of the physical ills known to the human race. It is also probable that it would eliminate many of the economic ills —for clanliness leads to order and order means system and success.

Milk at a temperature between 60° and 100° Fahr. is a perfect medium for the culture of bacterial life. Kept at such a temperature for a few hours, ordinary market milk becomes totally unfit for human consumption—it becomes a better food for hogs than for humans.

One of the very important provisions of the amended milk ordinance of Chicago (passed August 14, 1912) is that milk to be sold in this city must be cooled immediately after taken from the cow and thereafter, from cow to consumer, kept at a temperature below 60° Fahr.

On August 6, 1913, nearly one year after the amended ordinance was passed and all milk producers and handlers had notice of its provisions and ample time to effect arrangements to comply therewith, a general temperature test was conducted by the Health Department to ascertain to what extent the cooling provisions of the ordinance were being observed. Tests were made simultaneously at bottling plants in the country and at receiving platforms in the city.

Nineteen bottling plants located in all sections of the Chicago dairying zone in Illinois, Wisconsin and Indiana were selected for the country tests. In all, 1,811 cans of milk, representing the delivery of 1,244 farmers, were subjected to temperature tests. Ninety-one and one-half per cent. (91.5 per cent.) of the milk tested was found to be of illegal temperature, only 154 cans out of 1,811 registering a temperature of 60° Fahr. or below. Milk in 1,342 cans showed temperatures ranging from 61° to 70° and 315 were above 70°. The average of all tests was 64.6° F.

At these bottling plants all of the milk delivered by the farmers, *excepting 8.5 per cent.*, could have been condemned for sale in Chicago. To do so, however, would have resulted in a serious shortage of the city's supply for that day and therefore the policy was adopted to pass all milk showing temperatures under 63° F. and in no case to condemn more than one-fourth of any one producer's supply. Even under this liberal policy 387 eight-gallon cans of milk were condemned at the bottling plants and thrown back on the producers' hands. This was deemed a sufficient warning to all concerned of what may be expected to follow if the cooling provisions of the Chicago milk ordinance are longer ignored.

The temperature tests applied to the milk as it was delivered by the railroads to the city dealers were conducted on the same day as those at the bottling plants in the country and covered the receipts at the city receiving platforms of ten milk-carrying railroads. At these points 266 cans of milk were tested with the following results: 85 per cent. showed temperatures above 60° F.; only 40 cans registering below that mark. Seventeen cans, or 7½ per cent., yielded temperatures above 70° F., some reaching as high as 76°. The average of all platform tests was 65.1°—*higher than the average temperature of milk tested at the bottling plants.* The Baltimore & Ohio Railway's deliveries averaged 71.8°, nearly 12 degrees higher than the law prescribes; the Chicago & Northwestern Railway's deliveries registered an average of 67.5°. On four railroads—the Baltimore & Ohio Ry., Erie Ry., Chicago, Milwaukee & St. Paul Ry. and the Aurora, Elgin & Chicago Electric Ry.—not a single can of milk was found with a temperature as low as 60°, all were of illegal temperature. Seventy-four eight-gallon cans of milk were condemned at the platforms and returned to the shippers.

—"Preventive medicine" is defined in dictionaries as "that branch of medical science which aims to prevent or ward off disease by properly directed hygiene, personal and public." Hygiene is defined as "the science that treats of the laws of health in its broadest sense." These are vague definitions, but until recent years they were justified by the vagueness of the subjects they sought to define. Applied preventive medicine and hygiene are almost wholly a twentieth century product, and the twentieth century is only twelve—"going on-thirteen"—years of age. It is a wise provision of Nature that mountain climbers get out of breath, for in stopping to regain their breath they get their minds off the immediate obstacles to the next step, and their horizon broadens out from the immediate environment of their feet, and they see the splendid view below them as well as the inspiring unexplored heights above. It is so in preventive medicine. Already the backward look over the past twelve years presents a wonderful advance, and promises great advances for the future. The results to be achieved in the prevention of disease so largely depend on the individual cooperation of the citizens that popular education must be one of the chief factors in progress. One of the significant movements of the past five years has been the establishment of welfare departments of industrial enterprises. Competent medical officers are in charge of these departments and are equipped with facilities for examining and advising employees. They also are instructed to prepare and issue brief practical leaflets on foods, room-ventilation, clothing, sleeping porches and all the various subjects of personal hygiene.—*From the Bulletin of the California State Board of Health.*

—The Countess of Aberdeen, president of the International Council of Women, has edited the information secured by the Council on the steps being taken in various countries to prevent the spread of tuberculosis through infection by advanced cases. The plans which can be adopted are divided into: 1. The isolation and treatment in institutions especially suited for advanced cases. 2. Arrangements in the patient's home whereby danger to others is reduced to a minimum. The Council found that only a few authorities (New York City and New Jersey) had compulsory power to isolate dangerous cases. Lady Aberdeen is impressed by the need everywhere of a more complete system of home visitation by trained nurses under the supervision of doctors and care committees.

Deaths

John F. Ford, M.D., College of Physicians and Surgeons, Keokuk, 1883; of Waggoner, Ill.; died at his home after an illness of two years, from carcinoma, Aug. 30, 1913, aged 60.

Dr. Elvis G. Neel, M.D., American Medical College, Eclectic, St. Louis, 1878; of Litchfield, Ill.; specialist in diseases of the eye; died at his home, Sept. 6, 1913, from pneumonia, aged 75.

Samuel G. Bailey, M.D., Jefferson Medical College; 1844; for more than forty years a practitioner and banker of Chicago; died at his home in that city, June 20, aged 92.

Charles H. Zorger, M.D., Illinois Medical College, Chicago, 1897; a fellow of the American Medical Asociation; formerly a practitioner of Champaign and later a resident of Bloomington, Ill.; died at the home of his brother in Champaign, August 23, from nephritis, aged 46.

Edward G. Forshee, M.D., Cincinnati College of Medicine and Surgery, 1864; died in his home at Kinmundy, Ill., July 10, from acute gastritis, aged 78.

Francis Asbury Emmons, M.D., Rush Medical College, 1863; Illinois Army Board, 1863; for many a years a member of the Board of Education of Chicago, and at one time physician of Cook County; major and surgeon of volunteers during the Civil War and chief surgeon of Camp Douglas; died at his home in Chicago, August 21, aged 74.

Everett E. Gordon, M.D., Homeopathic Medical College of Missouri, St. Louis, 1897; of Cairo, Ill.; was shot and killed by the son of a patient, at the entrance of the drive leading to St. Mary's Hospital, Cairo, September 1, aged 40.

Lemuel Austin Ferry, M.D., University of Georgetown, Washington, D. C., 1879; formerly a member of the American Medical Association; a member of the Illinois State Medical Society; died at his home in Geneseo, June 14, from heart disease, aged 69.

Frederick Llewellyn Bartlett, M.D., Homeopathic Medical College of Missouri, St. Louis, 1868; for 61 years a resident of Aurora, Ill., and once mayor of that city; for ten years a member of the board of directors of the Public Library and for three years its president, and for eighteen years president of the board of education of West Aurora; died at his home August 7, from uremia, aged 69.

Stephen Charles De Veny, M.D., University of Pennsylvania, Philadelphia, 1871; a member of the Illinois State Medical Society and a resident of Chicago for more than forty years; died at his home in that city, August 16, from nephritis, aged 68.

Ira N. Barnes, M.D., Jefferson Medical College, 1862; a fellow of the American Medical Association and once president of the Decatur Medical Society; surgeon of volunteers during the Civil War; a member of the Illinois Army and Navy Medical Association; once a member of the Board of Health of Decatur, Ill.; died at his home, August 16, from cerebral hemorrhage, aged 84.

Margaret S. McNiff, M.D., Hahnemann Medical College, Chicago, 1893; formerly professor of obstetrics in Hering Medical College; died at her home in Chicago, August 21, from heart disease, aged 63.

Book Notices

An Introduction to the Study of Infection and Immunity. Including Serum Therapy, Vaccine Therapy, Chemotherapy and Serum Diagnosis. By Charles E. Simon, M. D., Professor of Clinical Pathology and Experimental Medicine, College of Physicians and Surgeons, Baltimore. New (2d) Edition, thoroughly revised. Octavo, 325 pages; illustrated. Cloth, $3.25, net. Lea & Febiger, publishers, Philadelphia and New York, 1913.

That this book is popular is shown by its running a second edition in less than one year. It covers the field of perhaps the most important medical questions of today. If man can be immunized against all infections, the dawn of a new medical era has arrived, but at the beginning of the dawn many perplexing questions arise, and it is these questions the author so ably discusses.

The great advances made in experimental medicine during the last few years has placed in the physician's hands many new curative as well as diagnostic and prophylactic agents. In the last five years these have come mainly in the guise of antitoxins, serums and vaccines, and today we probably have only a glimpse of what we may expect of the future, as relating to prophylactic and therapeutic medicine. The author brings these questions down to date and discusses them from today's standpoint.

Every up-to-date library should contain a copy of this new work.

Surgical Clinics of John B. Murphy, M. D., Volume II., No. 4 (August, 1913). The Surgical Clinics of John B. Murphy, M. D., at Mercy Hospital, Chicago. Volume II, No. 4 (August, 1913). Octavo of 206 pages, 49 illustrations. Philadelphia and London: W. B. Saunders Company, 1913. Published bi-monthly. Price per year: paper, $8.00; cloth, $12.00. W. B. Saunders Company, Philadelphia and London.

This number of Murphy's Clinics is especially interesting. The first article, which is on vaccines and serum therapy, is of great interest and coming now, at the time when these questions are being more discussed than ever, is exceedingly valuable.

Of especial interest in this number is a series of

ten skiagrams, showing the blood supply of the principal joints of the body. These skiagrams are very cleverly done, and add very greatly to the anatomical study of joints.

Several articles on joint surgery are given. Laminectomy in four conditions are described. Several interesting fracture cases are shown with skiagrams.

Appendicitis, vesical calculus, exploratory laparotomy, ankylosis of jaw, ankylosis of knee-joint, etc., are some of the other topics.

Anatomy, Descriptive and Applied. By Henry Gray, F. R. S., Fellow of the Royal College of Surgeons; lecturer on Anatomy at St. George's Hospital Medical School, London. New (American) edition, thoroughly revised and re-edited, with the ordinary terminology followed by the Basle anatomical nomenclature, by Edward Anthony Spitzka, M. D., Director of the Daniel Baugh Institute of Anatomy and Professor of General Anatomy in the Jefferson Medical College of Philadelphia. Imperial octavo, 1,502 pages, and 1,225 large and elaborate engravings. Cloth, $6.00, net; leather, $7.00, net. Lea & Febiger, Publishers, Philadelphia and New York, 1913.

Another revision of this wonderful work is just from the press. We presume no other medical book has gone through so many editions, and we also presume no other medical book was ever so popular, either with medical students, teachers of anatomy, surgeons, or the practicing physician.

The excellent paper, type and general make-up of the previous editions is here maintained. Many new cuts are presented and are unexcelled. Colored plates are more in evidence and are works of art. The engraving of names of structures directly on the illustrations, is an invaluable aid to the student. This feature, together with the liberal use of colored plates, helps very materially in placing "Gray's Anatomy" at the head of the list.

The terminology ordinarily used is given first place, but the new Basle anatomical nomenclature is added, thus giving the student the latest nomenclature, which will probably become the one universally used. The directions for dissecting are clear and full, and add much to the usefulness of the work. The table of contents and excellent index in the edition add materially to the value of the book as a reference work. Every medical student and every doctor should have a copy of this new edition of Gray's Anatomy.

Genitourinary Diagnosis and Therapy for Urologists and General Practitioners. By Doctor Ernst Portner, Specialist for Urology, Berlin, Germany, translated by Bransford Lewis, M.D. B.Sc., Professor of Genitourinary Surgery, Medical Department of St. Louis University, St. Louis; Genitourinary Surgeon to St. John's Hospital and Frisco Hospital; member of American Urological Association; American Association of Genitourinary Surgeons; American Medical Association, etc. Forty-three illustrations. St. Louis, C. V. Mosby Company, 1913.

"Genitourinary Diagnosis and Therapy." This little book seems well written for the use of the busy general practitioner. It covers a large field but is brief. A large number of formulae are given, and illustrations are fairly good. It seems full of information that is up to date, and is so brief that not much time is consumed in finding the salient points of Genitourinary Therapy. Price, $2.50.

The Battle Creek Sanitarium System. By J. H. Kellogg, M.D., Superintendent. Second Edition.

This booklet gives the history and methods of the institution, is profusely illustrated, and gives one an idea of the methods of care as well as of the size of the Sanitarium. It gives the physician a very clear idea of what may be obtained for his patient in the institution, as each of its departments is well described and illustrated. The author states that the booklet is issued especially for the profession.

The Practical Medicine Series. Comprising ten volumes on the year's progress in medicine and surgery. Under the general editorial charge of Charles L. Mix, A.M., M.D., Professor of Physical Diagnosis in the Northwestern University Medical School. Volume IV. "Gynecology" edited by Emilius C. Dudley, A.M., M.D., professor of Gynecology, Northwestern University Medical School; Gynecologist to St. Luke's and Wesley Hospitals, Chicago, and Herbert M. Stowe, M.D., associate in gynecology, Northwestern Medical School; attending obstetrician to Cook County Hospital. Series 1913. Chicago. The Year Book Publishers, 327 S. La Salle Street.

The Practical Medicine Series, Vol. IV. "Gynecology." A single volume of this series is given to the review of this subject, consequently the field is well covered. This volume is of special interest to the general practitioner, as well as to the specialist, because so many gynecological cases first see the general practitioner. It covers the field so thoroughly that it will be a very useful addition to your medical library. It is well to note these volumes may be purchased separately or in the complete series. Price, $1.35. Complete series of 10 volumes, $10.

The Practical Medicine Series. Comprising ten volumes on the year's progress in medicine and surgery. Under the general editorial charge of Charles L. Mix, A.M., M.D., Professor of Physical Diagnosis in the Northwestern University Medical School. Volume III. "The Eye, Ear, Nose and Throat," edited by Casey A. Wood, C.M., M.D., D.C.L., Albert H. Andrews, M.D., Gustavus P. Head, M.D. Series 1913, Chicago. The Year Book Publishers, 327 S. La Salle Street.

These series of year books are so well known that comment is almost unnecessary. Volume III, devoted to "The Eye, Ear, Nose and Throat," as usual, takes up most of those questions that have been discussed during the year, giving us those points which are new.

The introduction to the first part, "A Medical Degree in Ophthalmology," is of considerable interest to any one who practices medicine in any of its branches. It is a plea for higher ophthalmic education, and reviews some of the vexatious problems pertaining to legislation, as it applies to ophthalmologists and opticians.

The section on the Ear is a rather thorough review of the literature, Mastoid and Labyrinthine disease receiving generous notice.

In the last section the tonsil receives considerable attention. The review seems to suggest that perhaps there is some unnecessary surgery of tonsils. Price, $1.50.